

**Varazdin Development and Entrepreneurship Agency and Libertas International University**  
in cooperation with  
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**Faculty of Management University of Warsaw**  
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**ENCGT - Ecole Nationale de Commerce et de Gestion de Tanger - Abdelmalek Essaadi University**  
**Polytechnic of Medimurje in Cakovec**



# Economic and Social Development

90<sup>th</sup> International Scientific Conference on Economic and Social Development –  
"Building Resilient Society: National and Corporate Security"

## Book of Proceedings

Editors:

**Robert Kopal, Ante Samodol, Domenico Buccella**



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# NUCLEAR TERRORISM AS A THREAT TO GLOBAL SECURITY

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## **ABSTRACT**

*Terrorism is a contemporary scourge with deep roots that never ceases to disturb and occupy the scientific and professional public with its ubiquitous unpredictability. The feeling of the potential threat of terrorism causes apprehension and arouses distrust in the ability of states to protect their citizens. A turning point in understanding and a step forward in harmonizing the fight against this phenomenon represents 9/11 as a revolutionary event regarding the scale of terrorist attacks. The period followed was marked by the expansion of legal norms aimed at suppressing terrorist activities. Although there is no unified internationally accepted definition of terrorism, certain elements immanent to terrorism crystallized and were projected into the definitions of the national legislation of individual countries. Nevertheless, despite the fact that the concept of terrorism occupies the scientific and professional public to a considerable extent, the phenomenon of state terrorism remains poorly understood, theoretically insufficiently developed, and on the margins of scholarly interest. Also, contemporary forms of terrorism, especially the threat of nuclear terrorism, evoke consternation in the atmosphere of war turmoil in Eastern Europe and raise the paradox that due to the catastrophic anatomy of the scale of a nuclear war, its use is almost unthinkable. But is it? This paper gives an insight into the fundamental determinants of state and nuclear terrorism as a means of pressure in achieving military-political goals, as well as an assessment of the security situation in Europe in the context of recent research. Considering the different approaches to the fight against terrorism, which on the one hand is based on prevention (EU) and repression (USA), on the other hand, although extensive cooperation in the fight against terrorism, the USA and Europe do not agree on the essential nature of the terrorist threat as nor the best methods of its suppression.*

**Keywords:** *national security, terrorism, interstate terrorism, nuclear terrorism*

## **1. INTRODUCTION ON THE TERM OF TERRORISM**

The word terrorism is derived from the Latin verb "terrere," meaning to frighten, tremble, or cause fear. However, the words terrorism, terrorist, and terrorize mainly remained silent until the equivalent French words came into use during the revolutionary period between 1783 and 1798, where they were used to denote revolutionaries who sought to achieve their goals through the systematic use of terror or impose their views (Atai, Ita, 2021, p. 624). Thus, the word terror traces its roots back to the reign of terror instigated by Maximilien Robespierre in 1793 after the French Revolution, implying that terrorism is not a product of modern times but is as old as the human willingness to use violence to achieve political goals or force government to act in the desired way (Ibidem). In the absence of a unified definition of terrorism, numerous authors tried to conceptualize this term, so *Lacqueur* (2001, p. 79) postulates terrorism as "the use of covert violence by a group for a political end" or *Townshend* (2002, p. 5) for whom terrorism is "the calculated use or threat of violence for instilling fear, with the intent to coerce or intimidate governments or societies." For *Cooper* (2001, p. 883), terrorism is "the intentional generation of massive fear by human beings for the purpose of securing or maintaining control over other human beings" through a number of tactics that include assassinations, kidnappings, car bombs, or suicide bombings. For *Yacubu* (2005), terrorism is an evoked emotional response (victims' suffering) to a deliberate act of violence to promote a political or social agenda. *Michael* (2007, p. 37) notes that terrorism is "a public disturbance, a wave of agitation, a protest

against the government, damage to public and private property to attract the attention of the authorities." *Hoffman* (2008, p. 41) believes terrorism is "the deliberate creation and exploitation of fear through violence or the threat of violence in the search for political change." The lack of definitional consensus is primarily a reflection of the very political nature of terrorism, which can be summed up by the slogan "one man's terrorist is another man's freedom fighter" or "what is terrorism to some is heroism to others." (Martinez, 2002, p. 9; Ganor, 2011, p. 19). As *Cohen* (2012, p. 229) noted, the diversity of definitions of terrorism coincides with the number of people who have tried to offer them. Still, despite this diversity, most definitions of terrorism rely on several key elements in mutual correlation (Tiefenbrun, 2003, pp. 360-361; Martinez, 2002, p. 9; Bales, 2009, p. 180). The first constitutive element is the use or threat of violence. The second element is non-selectivity in the way that the targets to aim at are not the primary goal to be achieved. The third element is the deliberate targeting of civilians. Precisely for *Stohl* (2006, p. 6), what distinguishes terrorism from other acts of violence is its instrumentality and its targets. The fourth is the purpose of violence, which manifests through coercion to force people to undertake or omit certain behavior.<sup>1</sup> The causes of terrorism are deep-rooted and diverse. Modern-day terrorism, with its unpredictability, creates an atmosphere of public fear and undermines citizens' trust in the government. On the other hand, contemporary living conditions have contributed to the (maximum) effectiveness of terrorist operations. Mass urbanization and conglomeration of people in office buildings, shopping centers, sports competitions, churches, or markets contributed to the mass of victims committing terrorist attacks. Also, the mass development of the media enabled the easy dissemination of information and the quick availability of news about a potential terrorist act, which contributes to the spread of panic and creates pressure on governments to enter into negotiations with terrorists and agree to their demands (Atai, Ita, 2021, p. 626).

## 2. STATE TERRORISM

In most cases, state terrorism is aimed at short-term intimidation of the population in order to ensure long-term continuous political control. States often use terrorism when they lack the normative political means to ensure control (Gibbs, 1989, pp. 338-339). Although the field of terrorism is an inexhaustible and well-written topic, the literature on state terrorism is quite scarce compared to the thousands of publications devoted to non-state terrorism. Whiles scarce, there is an essential corps of research on state terrorism.<sup>2</sup> There are a number of introductory texts in which state terrorism is analyzed within a separate chapter<sup>3</sup> but without original research (Jackson, 2008, p. 380). *Silke* (2004, p. 206) found that less than two percent of papers from 1990 to 1999 in the basic journals for the study of terrorism focused on state terrorism. Much of the literature is devoted to analyzing and describing those states that are considered major sponsors of terrorism, groups that support terrorists, and the type of aid they provide. It is commonly argued that weak, totalitarian, or so-called 'rogue states' are predisposed to favoring and sponsoring terrorists (Martin, 2003, p. 90). *Conn* (2007, pp. 94-95) offers a typology of state terrorism by distinguishing "three distinct categories of state action": state terror, state involvement in terror, and state sponsorship of terror. *Blakeley* (2009, p. 35) further

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<sup>1</sup> *Wilkinson* identifies five main characteristics: it is premeditated to cause extreme fear or terror; it is aimed at a wider audience than the immediate victims of violence; it inherently involves attacks on random and symbolic targets, including civilians; committed violent acts represent a violation of social norms; terrorism is used to try to influence political behavior. (Wilkinson, 1992, pp. 228-229).

<sup>2</sup> See *Sluka, J.A. (2000). Death Squad: The Anthropology of State Terror. Philadelphia, PA: University of Pennsylvania Press; Gareau, F.H. (2004). State Terrorism and the United States: From Counterinsurgency to the War on Terrorism. London; Stohl, M. (2006). The State as Terrorist: Insights and Implications. Democracy and Security, 2 (1): 1-25; Blakeley, R. (2009). State Terrorism and Neoliberalism: The North in the South; Routledge*

<sup>3</sup> See *Barker, J. (2002). The no-nonsense guide to terrorism. Oxford: New Internationalist; Townsend, C. (2002). Terrorism: a very short introduction. Oxford: Oxford University Press; Martin, G. (2003). Understanding terrorism: challenges, perspectives, and issues. Thousand Oaks, CA: Sage; Goodin, R. (2006). What's wrong with terrorism? Cambridge: Polity*

distinguishes state sponsorship of terrorism from state perpetration of terrorism. In the latter context, he separates "limited state terrorism" aimed at a specific, narrow audience from "generalized" state terrorism, where entire populations are targeted. For *Raphael* (2010, p. 165), state terrorism is a deliberate act of violence against individuals whom the state is obligated to protect or the threat of such an act, and an atmosphere of fear has already been established through previous acts of state violence. Nevertheless, the phenomenon of state terrorism remains poorly understood and theoretically underdeveloped, with insufficient empirical data needed to improve knowledge (Jackson, Murphy and Poynting, 2010, p. 2). Although it is (was) undoubtedly present,<sup>4</sup> for a mixture of political and academic reasons, state terrorism has been marginalized in international terrorism studies (Jackson, 2008, p. 380, Ekmekci, 2011, p. 126).

### **3. CONTEMPORARY FORMS OF TERRORISM AS A THREAT TO NATIONAL SECURITY - NUCLEAR TERRORISM**

In recent times, nuclear terrorism is increasingly occupying the scientific and professional public and positioning the threat of nuclear terrorism in a prominent place in international politics. International treaties against the proliferation of nuclear weapons were adopted in early 1960s. The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) entered into force in 1970 and represents the only binding obligation in the multilateral treaty towards the goal of disarmament of states possessing nuclear weapons. Also, numerous conventions have been crucial to developing the international response and prevention of nuclear terrorism,<sup>5</sup> although only a few directly address nuclear security and related threats (Grenier, 2022, p. 26). Given that nuclear terrorism requires knowledge and the ability to handle and apply modern technology, until the end of the 20th century, this form of terrorism was somewhat on the margins of scientific and public interest. However, the easy availability of nuclear material further alarms that what used to be the only problem in producing a nuclear bomb (obtaining nuclear material) is no longer the case today (Šaljić, Đorđević, 2011, p. 5). Nuclear terrorism can take several forms, such as the forcible takeover of a nuclear facility by a terrorist, the targeting of a country's nuclear power facilities by terrorists or (terrorist) states using conventional or nuclear weapons or commercial aircraft, the deliberate detonation of a nuclear weapon by a terrorist organization or states, or the use of devices for radiological dispersal or exposure (Gale Armitage, 2019, p. 1246). Accordingly, *Šaljić and Đorđević* (2011, pp. 3-5) state three key aspects of nuclear terrorism: the use of a nuclear explosive device (nuclear explosion), attack or sabotage on existing nuclear facilities, and the use of the so-called "dirty" bombs (radioactive material is combined with conventional explosives and after the explosion, the radioactive material is dispersed into the environment). The most crucial aspect of nuclear terrorism is undoubtedly the attack and takeover of nuclear facilities (power plants, reactors), aiming to blackmail, threats, instilling fear, and gaining publicity. Thus, the danger of a nuclear attack influenced the EU to become more cautious in improving the energy security protection system, especially regarding global nuclear security (Bjelajac, Matijašević, 2013, p. 417).

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<sup>4</sup> For example, the nuclear bombing of Hiroshima and Nagasaki by the United States (Waldron, J. (2004). *Terrorism and the Uses of Terror*. The Journal of Ethics, 8 (1), p. 18); Indonesia's campaign of violence in East Timor between 1975-1999 (see Tanter, R., Ball, D. Van Klinken, G. (2005). *Masters of Terror: Indonesia's Military and Violence in East Timor*. Lanham, MD: Rowman & Littlefield Publishers) or the "dirty war" in Chile during the Pinochet regime (Dinges, J. (2004). *The Condor Years: How Pinochet and His Allies Brought Terrorism to Three Continents*. New York, NY: The New Press)

<sup>5</sup> Convention on Prevention and Punishments of Crimes against Internationally Protected Persons of 1973; Hostage Convention of 1979; Terrorist Bombing Convention of 1997; The Convention for the Suppression of the Financing of Terrorism of 1999; Convention on the Physical Protection of Nuclear Material and its 2005 amendment; International Convention on the Suppression of Acts of Nuclear Terrorism - ICSANT.

In 1984, *Meyer* (1984, p. 41) tried to measure the ability of a state to produce nuclear weapons by itself using ten different parameters.<sup>6</sup> He compiled a "list of nations with latent capabilities to produce nuclear weapons." Unable to directly measure the quantity or quality of the government's nuclear experts, *Meyer* relied on two indicators: research reactor activity in the past three years (equivalent to expertise in nuclear engineering) and manufacturing or assembly of automobiles, radios, and television sets (equivalent to expertise in explosives and electronics) (Sagan, 2011, pp. 228-229). Based on this data set, *Meyer* found that 34 countries had a latent capability to develop nuclear weapons in 1982. In the mid-1990s, *Stoll* (1996) updated *Meyer*'s data set by assuming that all states have access to nuclear materials given its easy availability on the global market. Based on the resulting data set, *Stoll* claimed that 48 states had a latent nuclear weapons capability in 1992. Despite the shortcomings in both studies, these studies served proliferation experts as a starting point for the creation of modern methodology and coding rules. Also, it is essential to make a distinction between civilian nuclear energy<sup>7</sup> and nuclear weapons.<sup>8</sup> Most scientists have examined the types of nuclear facilities of individual countries, trying to discern whether a government is building only a civilian energy capability or is secretly seeking to develop a latent or breakthrough nuclear weapons capability. Therefore, scientists often write about "nuclear ambiguity" (does the government seek weapons or not?) or "nuclear opacity" (does the government hide nuclear facilities to conceal its intentions?) (Sagan, 2011, p. 234). *Hymans* (2006, p. 12), for example, starts from the premise that very few states want nuclear weapons because decision-makers cannot know whether such a strategic effect will increase or undermine national security. Therefore, in his view, nuclear proliferation is rare. *Betts* (2010, p. 2) uses the term "nuclear blackmail," which aims to achieve an outcome but without detonating the weapon. The organization that uses the threat is nuclear-capable and articulates the specific conditions that will trigger an attack, which gives it advantages in negotiations (McIntosh and Storey, 2018, p. 292). For example, an organization may threaten that a nuclear attack will follow if the target state does not remove its troops by a certain date or does not comply with other required conditions.<sup>9</sup> Before realizing the threat of a nuclear attack, a terrorist organization (state) will potentially measure three parameters. First, it will assess the loss caused by a simple detonation of the weapon since the possibility of further negotiations is lost because the threat of nuclear weapons is possible only until its realization. Second, a nuclear attack would produce a global reaction far wider than the borders of the attacked target/state. Third, it is necessary to comprehensively assess all the indirect effects that the attack would produce on the future strategy of the terrorist organization (Ibidem, p. 295). Also, the realization of a nuclear attack has double repercussions for the continued existence of the terrorist organization itself: internal threats of disintegration and external threats to work further and exist. However, the consequences for society would be immediate and irreversible. Although *McIntosh and Storey* (2018, p. 298) state that "the detonation of nuclear weapons generally appears to be the least strategically advantageous option for non-state groups," the question arises, what about (inter)state nuclear terrorism?

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<sup>6</sup> The indicators for the independent production of nuclear weapons were: national mining activity, indigenous uranium deposits, metallurgists, steel production, construction work force, chemical engineers, nitric acid production, electrical production capacity, nuclear engineers, physicists, chemists, and explosives and electronics specialists.

<sup>7</sup> Today, thirty-two countries in the world produce electricity in nuclear power plants. Countries with nuclear reactors are: Argentina (2 nuclear reactors), Armenia (1), Belgium (7), Brazil (2), Bulgaria (2), Czech Republic (6), Finland (4), France (58), Croatia (1), India (20), Iran (1), Japan (55), South Korea (21), South Africa (2), Canada (18), China (13), Hungary (4), Mexico (2), Netherlands (1), Germany (9), Pakistan (3), Romania (2), Russia (32), Slovakia (4), Slovenia (1), Spain (8), Sweden (10), Switzerland (5), Taiwan (6), United Kingdom (19), Ukraine (15), United States (104)

<sup>8</sup> Today, seven countries are declared nuclear powers: United States, Soviet Union, United Kingdom, France, China, India, and Pakistan.

<sup>9</sup> In the history of armed conflicts, there have been only two enemy detonations of nuclear weapons carried out by the United States in an armed conflict over the Japanese cities of Hiroshima and Nagasaki on August 6 and 9, 1945. Between 129,000 and 226,000 people, mostly civilians, were killed.

#### 4. ASSESSMENT OF THE SECURITY SITUATION IN EUROPE

In 2010, the European Council on Foreign Relations (ECFR) published a report entitled "The specter of a multipolar Europe," which provides an assessment of the security situation in Europe. ECFR surveyed the field of the foreign policy of 27 EU member states. The study included over 250 interviews and the analysis of national security documents. Ten categories were crystallized under security threats: (1) weapons of mass destruction/Iran, (2) terrorism, (3) fragile states (incl. instability in Afghanistan and Pakistan), (4) energy depletion/competition for resources, (5) climate change, (6) Russia, (7) China (incl. economic threat), (8) economic crisis, (9) uncontrolled migration and (10) other (Krastev and Leonard, 2010, p. 25). The research produced three key changes in the EU's thinking about security. First, "most European policymakers have realized that Washington prefers to treat Russia as a global and not a European power. As a result, most EU member states realize that on issues of regional importance, they are left to deal with Russia on their own" (Ibidem, p. 30). Second, many European countries "have lost faith in NATO's ability to act as the main institutional framework for European security." Thirdly, it is clear that the EU must play a more significant role in dealing with security challenges on the European continent, but the US and NATO remain irreplaceable as a fundamental guarantee against a potential (big) war in Europe. (Ibidem, p. 32). The EU and NATO must deepen their strategic partnership for better cooperation in crisis management (Council of the European Union, 2009, p. 9). A recent study on the issue of national security and terrorism conducted by Wagnsson, Olsson, and Nilsen (2020) in Sweden showed that men are more prone than women to worry about populism and Russia. The focus on Russia suggests that men are more likely to imagine an antagonistic threat, a traditional "enemy" with a "face." One older male respondent explicitly focused on Russia, saying that "the Russians represent the biggest (security) threat" (Wagnsson, Olsson and Nilsen, 2020, p. 799). The research conducted produced five (biggest) threats to national security: (1) unreliable heads of state (like Trump, Putin, and Erdogan), (2) Russian foreign policy, (3) armed conflicts outside Europe that cause instability, for example, the influx of refugees, (4) weapons profiling and (5) conflicts between great powers (Ibidem). Young people were generally significantly less concerned about Russia as a security threat than older people, possibly because they were too young to have had personal experiences of the Cold War when the Soviet Union was generally considered a major threat to global security (Ibidem, pp. 811-812).

#### 5. INTERNATIONAL DOCUMENTS FOR COMBATING TERRORISM

The International Convention for the Suppression of the Financing of Terrorism from 1999 in Art. 2, para. 1 (b) provided the first general definition of terrorism. Namely, by prescribing behavior whose financing is prohibited, which refers to "any other act intended to cause death or serious bodily injury to a civilian, or to any other person not taking an active part in the hostilities in a situation of armed conflict, when the purpose of such act, by its nature or context, is to intimidate a population or to compel a government or an international organization to do or to abstain from doing any act" the essence of terrorism was described secondarily. The relevant definition contains the *actus reus* of a terrorist act, i.e., causing death or physical injury to civilians or persons not directly participating in hostilities. It also deals with special *mens rea*, which refers to the intent to intimidate or coerce behavior in the desired manner. Since the provision in question does not deal with the perpetrator's identity, it is clear that it applies both to state and non-state actors and individuals. Given that the vast majority of countries joined the convention only after the 9/11 terrorist attack (because Resolution 1373 of the United Nations Security Council required it from them),<sup>10</sup> it is possible to claim that 9/11 was a turning

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<sup>10</sup> With Resolution 1373 (2001), the Security Council gave a new, comprehensive dimension to the fight against terrorism by imposing on states a wide range of obligations aimed at the general prevention and suppression of acts of terrorism regardless of state borders and with a de facto unlimited duration. See Rusan Novokmet, 2019, p. 636.

point in the understanding and treatment of most countries of the world towards terrorism (Cohen, 2012, p. 235). In the last decade, numerous multilateral conventions related to terrorism were adopted, while several conventions on combating terrorism were also adopted at the regional level.<sup>11</sup> Shortly after the 9/11 attacks, the UN Security Council took a bold new step in mandating national anti-terrorism legislation worldwide, despite the seemingly obvious problem that the UN had not adopted a comprehensive definition of terrorism (Setty, 2011, p. 3). The primary obligation established by the international treaties against terrorism was the incorporation of the criminal acts stipulated by the international treaty into the domestic criminal legislation with adequately deterred punishments commensurate with the gravity of the criminal act. Also, the signatory states of international treaties against terrorism have committed to participate in the construction of "universal criminal jurisdiction" based on the principle of territoriality (O'Donnell, 2006, pp. 856-857). Finally, they accepted the obligation to extradite all suspected criminals found on their territory or initiate criminal proceedings following the principle of *aut dedere aut judicare*. International treaties always stipulate that terrorist offenses shall not be considered political offenses, which are not extraditable under most extradition treaties to facilitate extradition. One of the few international treaties that defined nuclear terrorism in international law after 2001 is the United Nations International Convention on the Suppression of Acts of Nuclear Terrorism of April 13, 2005. Thus, nuclear terrorism is considered any illegal and intentional possession of radioactive material or the use of radioactive material with the intent to cause death or serious bodily injury or cause significant damage to property or the environment, or to force a natural or legal person, international organization or state to do something or refrain from doing something (Art. 2. para.1.).

## **6. CRIMINAL (PREVENTIVE) APPROACH V. MILITARIZED (REPRESSIVE) APPROACH IN COMBATING TERRORISM**

The European Union's anti-terrorist strategy is based on the strategic operational principle of combating terrorism "on a global level with respect for human rights, to make Europe safer, allowing its citizens to live in an area of freedom, security, and justice" (Council of the European Union, 2005, p. 6). Thus, the EU's response to the fight against terrorism is based on the law enforcement model. Legislation and policy to combat international terrorism in the EU explicitly include a criminal law approach guided by a normative legal framework based on the principle of the rule of law, especially the principle of fair trial procedure and respect for human rights. Perpetrators of terrorist acts, as defined in international legal documents against terrorism, are perpetrators of criminal acts who are subject to criminal prosecution, which is the most appropriate and fair mechanism for ensuring fairness and protecting the rights of the accused (UNDOC, 2009, p. 3; Astrada, 2018, p. 205). On the other hand, the US response to international terrorism is based on a strong repressive reaction, placing national security in the first place of state interests. After the 9/11 attacks, then-President Bush declared that terrorists had declared war and that the US was entering a war in which it "will make not distinguish between the terrorists who committed the attack and those who harbor them."<sup>12</sup> The US perceived the threat to national security as "foreign" and therefore relied on predominantly military tactics in the "global war on terror" (Laurence, 2010, p. 3). Adopting a top-down approach to the fight against terrorism, it views it as a matter of national security and subordinates the security of the international community to its own security interests. Transparency, human rights, and dignity have played a minimal role in America's war on terrorism.

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<sup>11</sup> For the list of multilateral conventions with regard to terrorism as well as conventions on suppressing terrorism adopted at the regional level see Gagro and Škorić, 2014, p. 421.

<sup>12</sup> George W. Bush, Statement by the President in His Address to the Nation, THE WHITE HOUSE (Sept. 11, 2001, 8:30 PM), available at: <https://georgewbush.whitehouse.archives.gov/news/releases/2001/09/20010911-16.html>

Despite extensive counter-terrorism cooperation, the US and Europe disagree on "the precise nature of the terrorist threat, the best methods for managing this threat, and the root causes of terrorism," and moreover, they fail to "understand or accept each other's positions" (Laurence, 2010, p. 3). Furthermore, *Laurence* notes that "despite the 'remarkably similar' connotations of the national security threat in the 2002 US National Security Strategy and the 2003 European Union Security Strategy, including an emphasis on international terrorism," differences in counter-terrorism approaches hinder the harmonization of cooperation (Ibidem, p. 6). Unlike the USA, the EU actively strives to "strike a balance between the protection of human rights and the protection of citizens from terrorists," (Astrada, 2018, p. 207) looking at international terrorism as a matter of law enforcement and not as a matter of national security." The law enforcement model is "grounded on international criminal law and existing core anti-terrorism conventions" (Kielsingard, 2006, p. 253). So, although the fight against terrorism is a top priority for the EU, human rights and dignity go beyond the fight against terrorism. The Council of the European Union explicitly stated that respect for states' sovereignty, independence, and territorial integrity and the peaceful resolution of disputes cannot and is not subject to negotiation. "Territorial issues cannot be allowed to be resolved by the threat or use of military force - anywhere" (Council of the European Union, 2009, p. 9). Given that in June 2022, Ukraine was granted the status of a candidate country for EU membership, does this mean that Ukraine's accession to the EU the Russian-Ukrainian war will become a European-Russian war?

## 7. CONCLUSION

There is an intrinsic distinction between terrorist crimes and other forms of transnational crimes, which is reflected precisely through the political connotation of striving to achieve certain goals. There is a very close and mutual connection between terrorism and national security. Terrorism is the diametrically opposite pole of security because it consumes insecurities in an atmosphere of fear, resulting in citizens' lack of confidence in the state's ability to provide basic social needs inherent in human nature. The continuously progressive advancement of technology has articulated new forms of terrorism, especially nuclear terrorism. The latter recently, in the wake of the war in Eastern Europe, especially occupies the scientific and professional public, causes consternation and evokes fear of far-reaching consequences for the entire humanity. Until recently, numerous authors wrote about the slight possibility of committing a nuclear attack, referring to the paradox that precisely the far-reaching consequences diminish the possibility of its application. However, this statement becomes shaky in the context of the recent military-political turmoil in direct correlation with the war in Ukraine. There remains trust in the rational judgment of decision-makers despite the flagrant differences regarding the (realization) of the political aspirations of the superpowers that possess nuclear weapons and are breathing down Europe's neck. What is inherent in the war against terrorism is that it is a security problem, which raises the issue of human rights to the pedestal of contemporary aspirations. In the context of the above, different approaches to the fight against terrorism of the EU, on the one hand, and the USA, on the other, is evident. While the EU, in the fight against international terrorism, embraced the rule of law and individual freedom and the rights of citizens postulated fundamental social values in democratic societies based on the rule of law, the US found its answer to the fight against terrorism in a repressive model, especially the war for national security, where it does not hesitate to limit the freedoms of its citizens. In the atmosphere of a real threat to international security, the threat of nuclear war, the EU and the USA must strive to harmonize their diametrically opposed approaches to combating interstate (nuclear) terrorism.

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## INFLATION DETERMINANTS IN THE EA-11: LESSONS FOR BULGARIA

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### ABSTRACT

*The objective of this paper is to identify the determinants of inflation in the eleven founding countries of the Euro area (the EA-11) and draw lessons for Bulgaria, which wants to join the Economic and Monetary Union (EMU). An autoregression with distributed lag (ARDL) and annual Eurostat data for the period 1999-2021 are employed to identify the determinants of inflation in the eleven founding members of the Economic and Monetary Union (EMU). The results from the empirical analysis indicate the existence of a long-run equilibrium connection between the dependent variable (Harmonized Index of Consumer Prices (HIPC) inflation) and the independent variables (fiscal balance, output gap, government debt, interest rate on the ten-year government bonds, base interest rate of the European Central Bank (ECB), growth rate of the monetary aggregate M3, Producer Price Index (PPI) inflation and price level) in the ARDL. In the short term, the HIPC inflation in the EA-11 is negatively affected by the fiscal balance and the base interest rate of the ECB and positively influenced by the interest rate on the ten-year government bonds and growth rate of the monetary aggregate M3, while the impact of the price level and PPI inflation is insignificant. In the long run, the price level and government debt have a negative effect on the HIPC inflation in the EA-11, whereas the influence of the other independent variables is insignificant.*

**Keywords:** Bulgaria, Euro area, fiscal policy, inflation, monetary policy

### 1. INTRODUCTION

Inflation is a complex economic phenomenon and may result from different factors - monetary, demand-side, supply-side and structural (Totonchi, 2011). Three types of inflation may be distinguished according to economic theory - demand-pull, cost-push and structural (Kibritcioglu, 2002). The first type of inflation results from demand-side factors, which can be real, such as unsatisfied demand (Keynes, 1936), and monetary (excessive monetary expansion). Real inflationary factors on the demand side appear when GDP is above its potential level (inflationary gap). Monetary sources of inflation exist if the growth rate of money supply exceeds the growth rate of potential output (Friedman, 1992). The second type of inflation is caused by adverse shocks in aggregate supply (a decrease in the quantity and quality of production factors, an increase in the costs of inputs and a drop in productivity), which shift the aggregate supply curve to the left and lead to stagflation (Kydland and Prescott, 1982). Stagflation is a combination of stagnation (a decline in output) and inflation (a rise in price level). The third type of inflation arises from real convergence (reduction of economic disparities between more developed and less developed countries) and/or changes in the structure of relative prices of individual goods and services in the economy, stemming from various factors - political, social, economic, environmental and technological (Balassa; 1964; Baumol, 1967; Samuelson, 1964). Each type of inflation requires specific measures tailored to its cause. Demand-pull inflation implies a restrictive monetary policy. However, monetary restrictions are extremely risky in the present situation, as they could deepen the crisis. Cost-push inflation can be overcome by long-term policies for increasing the quantity and quality of factors of production such as investing in infrastructure, education, research and innovation.

In the event of an energy crisis, this means territorial diversification of energy supplies and investments in new energy sources and technologies for reducing the price of energy and for ensuring sufficient energy supply. The current energy and price crisis cannot be resolved at national (macroeconomic) level, but only at communitarian (European) level through the joint efforts of the member states and the institutions of the European Union (EU). Structural inflation can be a natural economic phenomenon or artificially caused by targeted national and supranational policies, such as the EU Green Deal. In the second case, funds should be provided not only to achieve the goal of these policies, but also to overcome their negative side effects (loss of jobs, rising prices of vital goods and services, impoverishment, reduced competitiveness etc.). The goal of this research is to identify the determinants of inflation in the EA-11 over the period 1999-2021 and draw lessons for countries such as Bulgaria, which want to adopt the Euro. In the conclusion section, recommendable macroeconomic policies for achieving price stability in the EMU are formulated.

## **2. EMPIRICAL ANALYSIS OF INFLATION IN THE EA-11**

### **2.1. Methodology**

The determinants of inflation in the EA-11 are identified via an ARDL, which includes the following variables:

- $INFL_{ij}$  – annual rate of change (in percent) of the HICP of country  $i$  in year  $j$ ;
- $FB_{ij}$  – fiscal balance (percent of nominal GDP) of country  $i$  in year  $j$ ;
- $GAP_{ij}$  – output gap (percent of potential GDP) of country  $i$  in year  $j$ ;
- $GD_{ij}$  – government debt (percent of nominal GDP) of country  $i$  in year  $j$ ;
- $INT\_LONG_{ij}$  – annual interest rate on the ten-year government bonds of country  $i$  in year  $j$ ;
- $INT\_SHORT_j$  – annual base interest rate of the ECB in year  $j$ ;
- $M3_j$  – annual rate of change (in percent) of the monetary aggregate M3 in the Euro area in year  $j$ ;
- $PPI_{ij}$  – annual rate of change (in percent) of the PPI of country  $i$  in year  $j$ ;
- $PR\_LEV_{ij}$  – price level of country  $i$  in year  $j$  (in percent of the price level of EU-15).

The target (dependent) variable is  $INFL$ . The independent variables of interest to this research are  $FB$  as an expression of the national fiscal policies of the EA-11 countries and  $M3$  and  $INT\_SHORT$  as instruments of the common monetary policy of the ECB. The other regressors are control variables, which reflect the impact of non-fiscal and non-monetary factors on inflation in the EA-11 ( $GAP$  is related to the business cycle,  $GD$  and  $INT\_LONG$  indicate the stability of public finance,  $PPI$  is a measure of supply-side (cost-push) inflation and  $PR\_LEV$  is a proxy for structural inflation).

### **2.2. Data**

Annual Eurostat and ECB data for the period 1999-2021 are used in the empirical analysis. The data for  $M3$  and  $INT\_SHORT$  are obtained from the Eurostat website, while the data for the other variables are taken from the website of the ECB.

### **2.3. Results**

The unit root tests (see Tables 1 and 2) show that  $FB$ ,  $GAP$ ,  $INFL$ ,  $M3$  and  $PPI$  are stationary at level (integrated of order 0), whereas  $GD$ ,  $INT\_LONG$ ,  $INT\_SHORT$  and  $PR\_LEV$  are stationary at first difference (integrated of order 1). The different order of integration of the variables requires the application of an ARDL.

<i>Variable</i>	<i>Probability</i>
FB	0.0049
GAP	0.0000
GD	0.9999
INFL	0.0000
INT_LONG	0.9996
INT_SHORT	0.9983
M3	0.0001
PPI	0.0000
PR_LEV	0.0846

*Table 1: Augmented Dickey-Fuller Unit Root Test on the level values of FB, GAP, GD, INFL, INT\_LONG, INT\_SHORT, M3, PPI and PR\_LEV*  
 (Source: Prepared by the author)

<i>Variable</i>	<i>Probability</i>
D(GD)	0.0000
D(INT_LONG)	0.0000
D(INT_SHORT)	0.0000
D(PR_LEV)	0.0000

*Table 2: Augmented Dickey-Fuller Unit Root Test on the first differences of GD, INT\_LONG, INT\_SHORT and PR\_LEV*  
 (Source: Prepared by the author)

The test for the optimal number of lags in the ARDL indicates that according to the Schwarz information criteria, this number is one (see Table 3). The ARDL is estimated with one lag.

<i>Number of lags</i>	<i>FPE</i>	<i>AIC</i>	<i>SC</i>	<i>HQ</i>
0	1.10e+08	44.05693	44.23919	44.13098
1	202.6632	30.85058	32.67321*	31.59111
2	75.33754	29.85005	33.31305	31.25706
3	13.58200	28.10811	33.21148	30.18160
4	7.209733	27.41889	34.16262	30.15886
5	1.505948	25.75894	34.14304	29.16538
6	0.207872*	23.63379*	33.65825	27.70670*
7	1.10e+08	44.05693	44.23919	44.13098

*Table 3: Optimal lag length in the ARDL*

\* Shows the optimal number of lags according to the respective criterion  
 (Source: Prepared by the author)

The ARDL is expressed by the equation

$$(1) D(INFL) = C(1) + C(2)*D(INFL(-1)) + C(3)*D(FB(-1)) + C(4)*D(GAP(-1)) + C(5)*D(GD(-1)) + C(6)*D(INT\_LONG(-1)) + C(7)*D(INT\_SHORT(-1)) + C(8)*D(M3(-1)) + C(9)*D(PPI(-1)) + C(10)*D(PR\_LEV(-1)) + C(11)*INFL(-1) + C(12)*FB(-1) + C(13)*GAP(-1) + C(14)*GD(-1) + C(15)*INT\_LONG(-1) + C(16)*INT\_SHORT(-1) + C(17)*M3(-1) + C(18)*PPI(-1) + C(19)*PR\_LEV(-1).$$

The results from the econometric estimation of the ARDL are reported in Table 4.

Variable	Coefficient	Standard error	t-Statistic	Probability
C	11.43282	4.617773	2.475830	0.0142
D(INFL(-1))	0.176079	0.105969	1.661613	0.0984
D(FB(-1))	-0.035734	0.042846	-0.834008	0.4054
D(GAP(-1))	0.000184	0.067739	0.002712	0.9978
D(GD(-1))	-0.010220	0.030226	-0.338133	0.7357
D(INT_LONG(-1))	0.367448	0.122714	2.994351	0.0032
D(INT_SHORT(-1))	-0.102634	0.191772	-0.535186	0.5932
D(M3(-1))	0.063281	0.048167	1.313775	0.1907
D(PPI(-1))	-0.009899	0.026074	-0.379639	0.7047
D(PR_LEV(-1))	0.026493	0.058937	0.449519	0.6536
INFL(-1)	-0.959190	0.130363	-7.357864	0.0000
FB(-1)	-0.061680	0.050735	-1.215741	0.2257
GAP(-1)	-0.053002	0.054225	-0.977449	0.3297
GD(-1)	-0.025037	0.009979	-2.509034	0.0130
INT_LONG(-1)	0.024389	0.110667	0.220379	0.8258
INT_SHORT(-1)	-0.081410	0.152074	-0.535335	0.5931
M3(-1)	0.013642	0.047318	0.288296	0.7735
PPI(-1)	0.020482	0.037550	0.545471	0.5861
PR_LEV(-1)	-0.081539	0.041790	-1.951166	0.0526

Table 4: Results from the econometric estimation of the ARDL  
 (Source: Prepared by the author)

The value of the coefficient of determination (R-squared = 0.53) implies that 53% of the variation of inflation in the EA-11 can be explained by changes in the independent variables in Equation (1). The probability of the F-statistic (0.00) indicates that the alternative hypothesis of adequacy of the model used is confirmed. It should be made clear that this does not mean that the model is the best possible, but simply that it adequately reflects the relationship between the dependent and the independent variables. The residuals in the ARDL are normally distributed (see Figure 1). The ARDL bounds test (see Table 5) provides evidence of the existence of a long-run relationship between the variables in the ARDL, which requires the estimation of an error correction model (ECM).

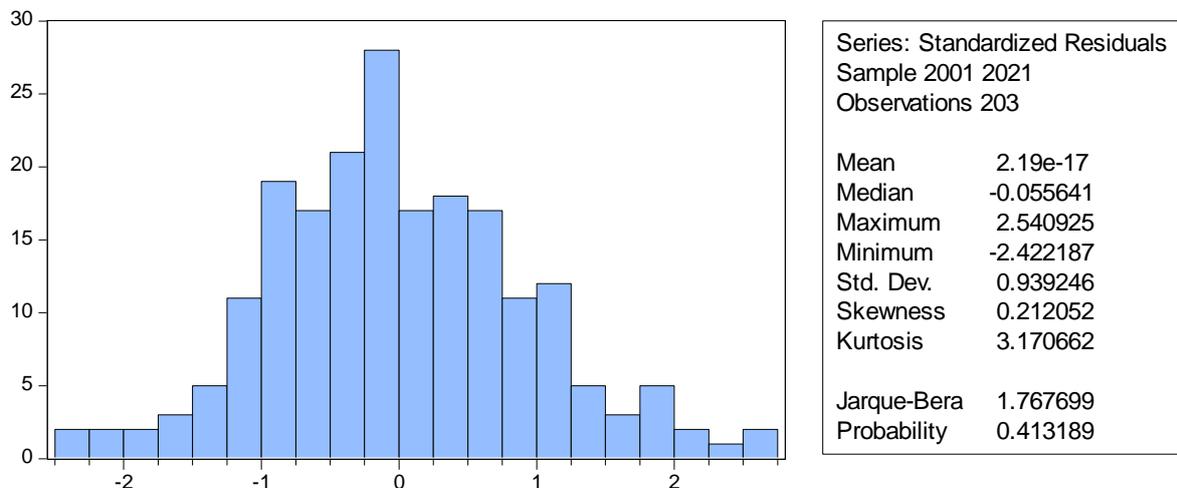


Figure 1: Normal distribution test on the ARDL residuals  
 (Source: Prepared by the author)

<i>Null Hypothesis: C(10)=C(11)=C(12)=C(13)=C(14)=C(15)=C(16)=C(17)=0</i>			
<i>Test Statistic</i>	<i>Value</i>	<i>Degree of freedom</i>	<i>Probability</i>
F-statistic	12.11906	(9, 174)	0.0000
Chi-square	109.0716	9	0.0000

*Table 5: ARDL bounds test  
 (Source: Prepared by the author)*

The ECM has the form

$$(2) \text{ D(INFL)} = \text{C}(1) + \text{C}(2)*\text{D(INFL}(-1)) + \text{C}(3)*\text{D(FB}(-1)) + \text{C}(4)*\text{D(GAP}(-1)) + \text{C}(5)*\text{D(GD}(-1)) + \text{C}(6)*\text{D(INT\_LONG}(-1)) + \text{C}(7)*\text{D(INT\_SHORT}(-1)) + \text{C}(8)*\text{D(M3}(-1)) + \text{C}(9)*\text{D(PPI}(-1)) + \text{C}(10)*\text{D(PR\_LEV}(-1)) + \text{C}(11)*\text{ECT}(-1).$$

The results from the econometric estimation of the ECM can be seen in Table 6.

<i>Variable</i>	<i>Coefficient</i>	<i>Standard error</i>	<i>t-Statistic</i>	<i>Probability</i>
C	-0.046408	0.093234	-0.497760	0.6192
D(INFL(-1))	0.137824	0.106975	1.288372	0.1992
D(FB(-1))	-0.104986	0.031315	-3.352553	0.0010
D(GAP(-1))	-0.032637	0.053180	-0.613715	0.5401
D(GD(-1))	-0.004992	0.021252	-0.234915	0.8145
D(INT_LONG(-1))	0.293666	0.107506	2.731623	0.0069
D(INT_SHORT(-1))	-0.460953	0.131596	-3.502803	0.0006
D(M3(-1))	0.192707	0.037628	5.121371	0.0000
D(PPI(-1))	-0.033006	0.021891	-1.507746	0.1333
D(PR_LEV(-1))	-0.042458	0.053470	-0.794065	0.4281
ECT(-1)	-0.899522	0.127898	-7.033150	0.0000

*Table 6: Results from the econometric estimation of the ECM  
 (Source: Prepared by the author)*

The regression coefficient before the error correction term (ECT) is statistically significant and negative, which implies the existence of a long-run equilibrium relationship between the dependent variable and the independent variables in the ECM. The absolute value of this coefficient – 0.90 – means that that each deviation from the long-term equilibrium is eliminated at a rate of 90 percent per annum. The short-run regression coefficients before D(FB(-1)), D(INT\_LONG(-1)), D(INT\_SHORT(-1)) and D(M3(-1)) are also significant, which suggests that in the short run the inflation in the EA-11 is affected by the past values of the fiscal balance, the interest rate on the ten-year government bonds, the base interest rate of the ECB and the growth rate of the money supply. The signs of the three significant short-term regression coefficients are in agreement with theoretical expectations - positive before D(INT\_LONG(-1)) and D(M3(-1)) and negative before D(FB(-1)) and D(INT\_SHORT(-1)). In the short run, the inflation rate in the EA-11 can be decreased by both fiscal and monetary tools – an improvement in the fiscal balance and in the condition of public finance, a rise in the base interest rate of the ECB and a decline in the rate of growth of the money supply. The absolute values of the significant short-term regression coefficients indicate that i, the base interest rate of the ECB and the rate of growth of the money supply have a stronger effect on inflation in the EA-11 than the fiscal balance; and ii, the base interest rate of the ECB has a higher impact on inflation in the EA-11 than the rate of growth of the money supply.

In the long term, inflation in the EA-11 is negatively related to the price level and the government debt (see Table 4). It may be inferred that the long-term price stability in the founding members of the EMU is determined by the degree of economic development (approximated by the price level) and the stability of public finance (approximated by government indebtedness). The value of the coefficient of determination of the ECM ( $R^2 = 0.39$ ) means, that 39% of the variation of inflation in the EA-11 can be explained by changes in the independent variables in Equation (2). The probability of the F-statistic (0.00) implies that the alternative hypothesis of adequacy of the model used can be accepted. This does not mean that the model is the best possible but simply indicates that it adequately reflects the relationship between the dependent and the independent variables. The residuals in the ECM are normally distributed (see Figure 2), which is an indirect indicator of a good model specification.

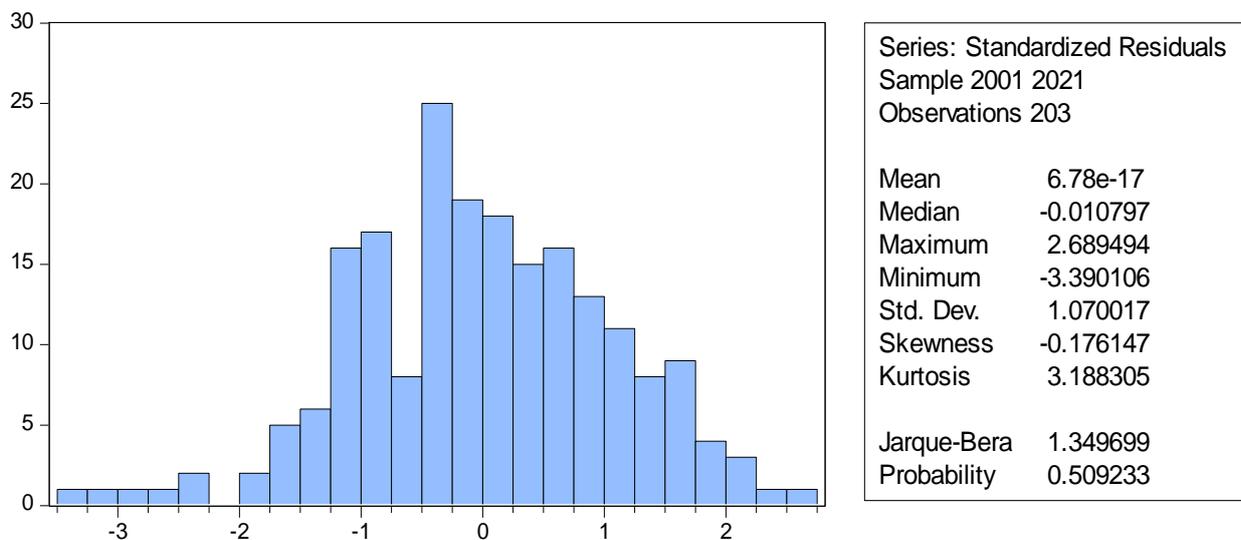


Figure 2: Normal distribution test on the ECM residuals  
 (Source: Prepared by the author)

The results from the Pairwise Granger Causality Tests show that in the short-term inflation in the EA-11 is Granger-caused by government debt, the interest rate on the ten-year government bonds, the base interest rate of the ECB and the growth rate of money supply (see Table 7). The results from the Granger Causality / Block Exogeneity Wald Tests show that in the long run government debt, the interest rate on the ten-year government bonds and changes in producer prices are the reasons for inflation in the EA-11 (see Table 8).

<i>Independent variables</i>	<i>Probability</i>
FB	0.4265
GAP	0.3599
GD	0.0036
INT_LONG	0.0734
INT_SHORT	0.0069
M3	0.0259
PPI	0.4125
PR_LEV	0.2401

Table 7: Results from short-term causality tests  
 (Source: Prepared by the author)

<i>Independent variables</i>	<i>Probability</i>
FB	0.2958
GAP	0.2134
GD	0.0182
INT_LONG	0.0170
INT_SHORT	0.6363
M3	0.5969
PPI	0.0678
PR_LEV	0.7592

*Table 8: Results from long-term causality tests  
(Source: Prepared by the author)*

### 3. CONCLUSION

This research provides useful insights for fiscal and monetary policies in the EA-11 concerning price stability. The following important inferences can be drawn from the empirical analysis in this study:

- 1) Fiscal and monetary policies affect inflation in the EA-11 in the short term but not in the long run;
- 2) Monetary policy has a stronger effect on inflation in the EA-11 than fiscal policy;
- 3) Changes in interest rates have a higher impact on inflation in the EA-11 than changes in money supply;
- 4) The good condition of public finance has a favorable influence on price stability in the EA-11 both in short term (through lower interest rate on the ten-year government bonds) and in the long run (through lower government debt);
- 5) In the long term, inflation in the EA-11 is determined by the degree of economic development (approximated by the price level) and the stability of public finance (measured by the government debt-to-GDP ratio).

Price stability in the EA-11 can be achieved through fiscal and monetary policies in the short run only. However, the long term price stability in the EA-11 results from high degree of economic development and sound management of the public finance. While monetary factors are short-run causes of inflation, the condition of government finance is both a short-term and long-term reason for inflation. Changes in producer prices do not cause changes in consumer prices in the short run but do in the long run. What lessons can be drawn for Bulgaria from the empirical analysis of the determinants of inflation in the EA-11? First, from the standpoint of real convergence Bulgaria is not ready to adapt the Euro. The low price level in Bulgaria in comparison with the EA could cause inflation problems in Bulgaria in the long run, as suggested by the empirical results from this research. Second, from the viewpoint of nominal convergence (stability of public finance) Bulgaria is prepared for a membership in the EMU.

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## HUMAN RESOURCE MANAGEMENT AND MOTIVATION IN NON-PROFIT ORGANIZATIONS (NPO): EVIDENCE FROM CROATIA

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### ABSTRACT

*Non-profit organizations (NPO) play an important role in society because their activities increase the community's well-being. Although the primary goals of NPO are significantly different from those of for-profit organizations, the business practices and models of these types of organizations should be similar, especially in managing and motivating people. The success of a NPO depends primarily on its employees, associates, and volunteers because people are a crucial element of any organization. The topic of this paper is the specifics and challenges of human resource management (HRM) and motivation in NPO. NPO face problems such as recruitment, lack of financial resources, and loss of motivation among employees, affecting their HRM and motivational strategies. Two NPO from Croatia were analysed to determine the implementation of HRM and motivation practices in NPO. Structured interviews with responsible persons were conducted to provide insight into the business of the analysed NPO. The analysis showed that the observed non-profits apply good HRM practices (they carry out detailed job analysis, apply a complex testing procedure during the selection process, train employees and volunteers) and use various motivation strategies (bonuses, participatory management, flexible working hour and feedback). Moreover, some good business practices applied by non-profits do not appear in for-profit organizations either. However, there is still a challenging problem with motivating employees and volunteers in NPO, mainly because they often cannot motivate people with material compensation. Therefore, people who work in NPO usually have a strong internal motivation, but it can quickly disappear if the organization does not seek to increase it. It is crucial that the NPO successfully applies HRM practices and employee motivation – in that case, there will be no problem finding and retaining quality employees.*

**Keywords:** *human resources, human resources management, motivation, non-profit organizations (NPO)*

### 1. INTRODUCTION

Human resource management (HRM) and motivation are two essential management functions directly focused on people. As the essential element of any organization, people require the most attention. It is necessary to take care of their needs and satisfaction to use people's potential as much as possible to meet both organizational and individual (personal) goals. Human resources are equally crucial for all organizations, regardless of their size, activities, and even the fundamental goals for which they are established. Unlike for-profit (economic) organizations, NPO are not focused on making a profit but on maximizing social performance. However, to achieve their vision, mission, and goals, they also need well-chosen, trained, coached, motivated, and satisfied people who identify with their business.

This paper emphasizes HRM and motivation in NPO, particularly on the specifics and challenges faced by NPO in their environment. It is a common and usually verified thought that NPO do not have a professional approach to HRM (Parseyhan 2017). An uncertain environment regarding funding sources makes it even more difficult for NPO to successfully manage and motivate human resources (Weisberg and Dent 2016). Non-profits are especially vulnerable to the costs associated with losing employees. These organizations tend to be small-scale and labour intensive, so it is essential to have a well-developed HRM system (White 2019). Parseyhan (2017) points out that NPO often do not invest in their employees or do not have the opportunity to do so. Also, HRM of NPO face the challenge of understanding and meeting employees' intrinsic and extrinsic needs while competing with for-profit organizations that offer higher salaries and benefits. NPO mostly cannot offer their employees various material forms of compensation (Weisberg and Dent 2016). The main goal of this paper is to determine whether NPO apply good HRM practices and how they motivate employees considering the problems they face. In addition, the paper presents the results of the analysis of the activities of two NPO in Croatia, with particular emphasis on HRM practices and motivation in these organizations.

## **2. THE SPECIFIC ENVIRONMENT OF NPO AND THEIR ROLE IN SOCIETY**

There are three primary sectors in society – for-profit, public and non-profit, and in addition to them, the family sector also appears as a unique (fundamental) cell of society. Marić (2018) points out that the non-profit or third sector appears to bridge the gap between the state and the market to solve problems in a society that does not include public and private action. One characteristic of non-profit sector organizations is that they help "society become a community of responsible individuals focused on personal / family progress, but also the progress of the community to which they belong" (Pavičić 2003, p.15). Although there is no generally accepted definition of NPO, there is a common interpretation that these organizations seek to increase society's welfare; their primary purpose is not to make a profit (Alfirević et al. 2013, p.16). We can define NPO in a narrower and broader sense, and their role in society differs accordingly. In a narrower sense, NPO are civil society organizations that have a social purpose, are outside the activities of the state and markets, and are focused on volunteering (Marić 2018, p.20). Civil society organizations are wholly non-profit and are oriented toward meeting citizens' needs and contributing to society's development because they respect ideas, opinions, and values (Marić 2018, p.56). The broader definition of NPO includes all public sector organizations based on the public interest and the provision of public goods and services (Marić 2018, p.34). In the specific environment of NPO, it is important to mention their organizational culture as a specific way of life and work in the organization. The organizational culture of non-profits is focused on people, not results, emphasizes the need to value work that makes a difference and contributes to society, and special attention is paid to volunteers (Word and Sowa 2017, p.314). According to research by Kwiecińska (2008), the organizational culture of NPO is generally characterized by participatory management style, volunteering, flexibility, information, shared values and beliefs. In practice, this means that employees usually have different goals in for-profit organizations. In contrast, in NPO, employees generally share the same goal – to do something good for society. NPO can be formed only in democratic societies where the demands and will of community members are respected. In contrast, NPO seek to meet general, social, and civic interests and ultimately influence the problematic phenomena encountered by society (Alfirević et al. 2013). The absence of NPO would lead to the dissatisfaction of citizens. Many of them would feel insignificant, considering that society would lack individuals who will represent the interests of specific groups of citizens in an organized manner seeking to improve, enrich or improve their lives.

### 3. HUMAN RESOURCE MANAGEMENT IN NPO

HRM is one of the fundamental functions of management. Bahtijarević-Šiber (1999, p.16) points out that human resources represent an organization's full knowledge, skills, and abilities. An organization uses people to achieve goals and to develop business. HRM is a process of hiring, training, evaluating, and rewarding employees and relates to policies, practices, and systems that influence employees' behavior, attitudes, and work performance (Noe et al. 2006; Dessler 2015). In other words, HRM focuses on the policies, activities, and tasks that seek to influence employees to help the organization achieve its goals. If an organization has well-designed plans, excellent structure, and the latest technology, it can still fail if it employs the wrong people or does not know how to keep them and work on their development (Dessler 2015, p.31). That is why HRM is crucial and one of the essential functions of management, both in for-profit and especially in NPO. The success of a NPO depends on how many people it gathers are educated and committed to work and organization (Marić 2018, p.106). Vasić (2009, p.126) points out that people can be the initiators of the development of NPO, but they can also hinder their development if they are not developed and led adequately – human resources in the organization are useful and good to the extent that management succeeds in its intention to get the most out of them, satisfying both organizational and individual needs. Wolf (1999) states that there are four workforce groups in non-profits. The first group consists of paid staff, the second group includes volunteers, i.e., individuals who donate their free time, knowledge, and talents to NPO, the third group consists of workers bound by independent contracts, and the last group includes associates from external organizations that provide services. Managers should be aware of individual groups' differences, needs, interests, and motivations to create a community of equal members (Marić 2018, p.108). One of the crucial functions of HRM is the acquisition of human resources, which has some specifics regarding NPO. The first task of a human resources manager is to plan and get the best people in the organization. Due to the lack of human resources, many NPO do not pay attention to job analysis and human resource planning because they consider it less important than other activities (Alfirević et al. 2013, p.207). Job analysis is followed by recruiting people. Non-profits can find candidates with the help of former and current employees and have access to many former volunteers (Watson and Abzug 2005). After finding potential candidates, the selection is made. Watson and Abzug (2005) point out that selection in NPO should include personal values, i.e., agreement on the values of individual candidates with the values and mission of the NPO. The selection is followed by training and implementation of the orientation process, and in NPO, this is usually the responsibility of Board members or the President. The last group of activities in the HRM process is related to the development and retention of employees and volunteers. Golensky and Hager (2020, p.299) state that the development of employees and volunteers forms part of the reward system and leads to increased benefits for the organization and employees and volunteers. Alfirević et al. (2013, p.219) add that motivating and rewarding for the work invested and the results achieved ultimately results in employee retention. Building on other authors, Marić (2018) emphasizes some HRM activities that are fundamental sources of problems in NPO, primarily employment, communication within the organization, and compliance with local and state employment laws. A particular challenge for managers of NPO is related to how to do business – independently, with the help of (new) employees, external associates, and volunteers. Non-profits often have difficulty finding new employees due to limited financial resources (Alfirević et al. 2013; Pynes 2013). One reason is an increase in the number of social enterprises involved in the third or non-profit sector (Word and Sowa 2017). The challenge faced by NPO is communication between staff, management, and volunteers. Brinckerhoff (2009, p.108) points out that many NPO change and grow quickly, so employees and volunteers need to be adequately informed; otherwise, they will feel dissatisfied because they are not aware of current information about the organization.

Since members of the Board of NPO are usually volunteers, and their time dedicated to a NPO is very limited, it is challenging to distribute the necessary information effectively and timely to employees of the organization and other engaged volunteers and associates. Compliance with local and state employment laws can sometimes be very demanding due to frequent changes, so it is necessary for NPO to continuously monitor the legal environment (Pynes 2013, p.410). However, as the entire legislative and legal framework in which NPO operate changes regularly, it is a unique challenge to be well informed about all the necessary actions that a NPO must take to act under legislative and legal norms.

#### **4. MOTIVATING IN NON-PROFITS**

Bahtijarević-Šiber (1999, p.558) states that motivation can be viewed from two aspects. From the manager's point of view, motivation is an activity that allows people to strive for set goals and achieve them. From the individual's perspective, motivation is an internal state that leads to achieving a goal. What is undeniable is that motivation plays a crucial role in HRM. Motivating others is an indispensable part of managerial work. Unmotivated employees do not try to show their knowledge and skills because they think the organization does not recognize it, so they do not bond with the organization and are always ready to leave it. Managers need to know how to motivate employees and other co-workers to prevent this, considering that each individual is different. What is a motivator for one person will not necessarily motivate another person. Employees in NPO strive to achieve specific goals because it brings inner satisfaction. They prefer work that is useful for society, and they place the needs of society at a higher level in the field of motivation than high incomes (Legnerová 2016). According to Legnerová (2016), the most important motivating factors for employees in NPO are the work content, working atmosphere, working conditions and hours, and fourth-place financial reward. Non-profit employees believe in their organization and its mission and tend to associate themselves with the organization's values (NextStep 2019, Bassous 2015). Schepers et al. (2005) point out that non-profit managers seemed to display a stronger commitment to their organization's mission and were more helpful and forgiving than for-profit managers who sought high salaries. Specific of NPO is that they attract people who have a strong inner motivation. A person is considered intrinsically motivated if he/she acts on his/her instincts (Leonard 2012). Such persons are not motivated by external influences and are not motivated by monetary rewards. The primary motives that motivate non-profit employees are helping others, validating personal abilities, opportunities for improvement and advancement, and acquiring new knowledge and skills (Lukes and Stephan 2012). Managers of NPO want their work to be meaningful and purposeful, and their main goal is to help others and meet other people's needs (Leonard 2012). Such a focus should be passed on to their subordinates. Employees and volunteers require different approaches from managers. Employees are paid for their work, while volunteers work for free, so it is necessary to determine how to motivate the first one and the other. According to Hansen et al. (2003), material rewards such as salaries, bonuses, incentives, and various benefits affect employee satisfaction, but they do not play a significant role. The most important thing for employees is that the job is exciting and challenging, that they have a chance to help someone, that they can progress, and that some benefits are vital to them, such as vacation, paid leave, provided transportation, the possibility of recreation at work, etc. Flexible working hours, organizational culture, and recognition of success significantly motivate non-profit employees. Glavinić and Najev Čačija (2018) point out that volunteers are a key element of any NPO. People volunteer for a sense of self-realization, socializing, learning, and development within the organization, and potentially employment opportunities. Organizations have to understand why people volunteer, and on this basis, they need to build a relationship with them (Bussell and Forbes 2003). NPO should recognize and reward each personal success in business.

The awards should be of a tangible and intangible nature, i.e., diverse and in line with the interests and wishes of the volunteers. NPO will prove to their employees and volunteers that they care for them and respect their needs by applying tangible and intangible motivation strategies. NPO are faced with several challenges when motivating employees and volunteers. Motivating employees is a big challenge for NPO. Glavinić and Najev Čačija (2018) point out that the primary problem in motivating employees is that NPO often depend on the state budget, so they cannot devote enough time to their employees but are focused on providing the necessary funds. Many NPO are funded solely by project funds, donations, and membership fees. However, these funds are not intended to motivate employees and volunteers, so it is not easy to form a motivational system. Another challenge is to increase the motivation of non-profit management. The administrative system, i.e., frequent changes in laws and regulations, bureaucratic burdens, and dependence on the decisions of other organizations, often causes stress in managers, which can ultimately negatively affect their intrinsic motivation (Ujčić 2015). If there is a lack of motivation in managers, it will affect the business of the organization and the motivation of employees and volunteers. Due to the increase in the number of NPO, it is a problem for managers to motivate and keep people in the organization because they have been given much greater opportunities to get a job in another NPO. The management of NPO must continuously improve the motivational framework to attract and retain the best employees. Word and Sowa (2017) state that non-profits cannot rely solely on intrinsic motivation and commitment to helping others.

## **5. HUMAN RESOURCES MANAGEMENT AND MOTIVATING ON THE EXAMPLE OF TWO NPO**

For NPO to be successful, they must adopt good HRM practices. Nakaweesi (2018) points out that adopting HRM practices is crucial for hiring qualified, experienced, dedicated employees who help achieve results and goals. NPO generally do not have an HRM department and experts who would deal with this area, but Presidents or Board members perform this function (Nakawessi 2018). Akter (2018) compared two NPO and concluded that both organizations have several problems related to HRM, such as inappropriate recruitment procedures and insufficient employee training. Parsehyan (2017) states that the Istanbul Foundation for Culture and Art (IKSV) successfully manages human resources, pays attention to personnel planning, conducts job analysis, employee orientation, various types of training and continuously works to improve conditions for employees. In terms of motivation, Nakawessi (2018) concluded that employees of non-profits are often disloyal and that small changes can encourage them to leave the organization. Parsehyan (2017) points out that IKSV generates motivation through career development, educational opportunities, promotions, participation in culture and art affairs, and seminars abroad, in addition to financial rewards. The Nonprofit Priorities Benchmark 2021 Report states that NPO are most concerned about employee engagement, fundraising and recruitment/workforce (Wipfli.com 2021). These three challenges significantly affect the success of HRM and motivation. Exploring the process of motivating and acquiring human resources in two NPO in the Republic of Croatia, this paper tries to answer whether NPO apply good HRM practices and what motivation strategies they use to attract and retain employees and volunteers. For this purpose, qualitative research was conducted in the form of interviews. Two structured interviews were held with responsible persons for HRM in two NPO – Society of persons with muscular dystrophy, cerebral paralysis and other physical disabilities Varaždin (abbreviated name: DDICDP Varaždin) and the Association of Families with Three or More Children (abbreviated name: Families 3plus). The interview consisted of 12 questions, and the main focus was on the process of acquiring human resources and motivation strategies. In the research, a deliberate sample was used – associations, since they are the most numerous NPO in Croatia.

The aforementioned NPO were chosen because they operated in the area close to the authors and were willing to participate in the research. The following are essential answers from which the practices of HRM and the motivations used in these NPO can be distinguished.

### **5.1. Example from practice: DDICDP Varaždin**

Society of persons with muscular dystrophy, cerebral paralysis and other physical disabilities Varaždin (DDICDP Varaždin; in Croatian: Udruga Društvo distrofičara, invalida cerebralne i dječje paralize i ostalih tjelesnih invalida Grada Varaždina) was founded in 1981. DDICDP Varaždin is a humanitarian NPO that promotes health, educational, cultural, social, and other interests to improve the quality of life of persons with physical disabilities (DDICDP Varaždin n.d.). DDICDP Varaždin does not have an HR department, but the President performs this function, assisted by the human resources coordinator. About 40 people are actively involved in the association, including volunteers and employees, and the association sometimes hires external associates when drafting projects. DDICDP Varaždin employs mostly personal assistants for people with disabilities and, according to the needs of project activities, economists, social workers, and other experts in social orientation. Acquisition of human resources in DDICDP Varaždin begins with planning, including job analysis and forecasting staffing needs. Job analysis is not conducted in writing, but a team interview seeks to determine which employee profile the organization lacks. Employees often do not work in just one place, so it is not easy to analyze a real job. After the DDICDP Varaždin finds a certain number of potential candidates, a selection procedure follows, depending on whether it is the employment of personal assistants or people who will work on projects. When hiring personal assistants, the needs and wishes of people who need help are taken into account, and based on this information, a decision is made as to which candidates would be suitable for that person. Conversation between potential candidates and people who need an assistant is also important. Hence, the employment of personal assistants depends mainly on the members of the association. When it comes to people who are hired to work on projects, it considers whether the candidate has already possibly volunteered/worked in another NPO. The most commonly used selection method is the interview. Several association employees participate in the interview to make it easier to decide whom to hire. The DDICDP Varaždin Association conducts employee training through on-the-job training and various workshops. When a person is hired, he/she first undergoes an orientation process. The new employee/volunteer gets to know all the employees, receives an explanation about how the association works, whom he/she can turn to for help, and what his/her duties are, and one of the existing employees then trains that person in his/her work. The DDICDP Varaždin paid for an accountant's course for one employee. Employees are also sent to workshops organized by various groups and NPO. With the team spirit, it tries to get people to stay and often conducts job rotation to get all employees acquainted with all the tasks that have to be done. The motivation of employees and volunteers in DDICDP Varaždin is mainly influenced by the knowledge of employees and volunteers to do something good for other people. With their optimism, members of the association also affect employees' motivation. Tangible forms of reward are applied, but to a lesser extent than intangible ones due to a lack of financial resources. Among the intangible rewarding forms, this organization uses flexible working hours, recognition of success, participatory management, and strives to maintain an excellent organizational culture. Thanks to flexible working hours, employees can more easily reconcile their obligations and working hours and agree on vacations or days off. In recent years, the DDICDP Varaždin has organized team building for its employees, volunteers, and associates. The President often praises the employees and emphasizes their importance to this organization. The Board makes critical decisions, and the President involves employees in decisions that affect their work area.

## **5.2. Example from practice: Families 3plus**

The Association of Families with Three or More Children (Families 3plus; in Croatian: Udruga obitelji s troje ili više djece) is "an independent, non-profit, non-governmental, non-confessional and non-partisan organization that promotes, supports, protects and represents the interests of families with three or more children" (Obitelji 3plus n.d.). Families 3plus was founded at the beginning of 2018. The mission of the 3plus Family Association is to support and bring together large families and contribute to creating better living conditions for families in Croatia, especially those with three or more children. In the 3plus Family Association, the Board of Directors is responsible for human resources, headed by the President of the Association, which consists of five members. The Board plans human resources, conducts the selection process, and decides on other areas related to HRM. The Board regularly uses external experts who have an advisory role in important HRM issues. When looking for external associates, they must support the organization's work, i.e., they can identify with its mission. This often results in external collaborators doing part of their work on a volunteer basis or in some other way supporting the association's work. The 3plus Family Association employs two people, and a dozen other volunteers are involved in the association's management and professional activities because the association does not currently carry out humanitarian activities. Families 3plus primarily seeks highly educated and professional volunteers to help the Board of Directors improve the quality of business. Acquiring human resources in the association begins with a job analysis. For each newly created job, the tasks and scope of employee responsibilities are precisely defined, and the desirable characteristics and expectations of the candidate are stated. The association is primarily oriented toward internal sources of obtaining people because it is a NPO with a large membership, which is its strength, so it has a large selection of opportunities. New associates are trying to be obtained through existing contacts and a partner network of associates. After planning and obtaining human resources, selection follows, which is carried out through four steps. First, candidates send a resume and a motivation letter explaining why they would hire to work for the association. After the Board of Directors reviews resumes and cover letters, it contacts potential candidates. After preliminary telephone conversations, potential candidates solve the test for the specific job they are applying for. Based on the test results, a decision about who is invited to the interview is made. Three to five people conduct the interview, and pre-defined questions are used. After the interviews, the final decision on selecting candidates for each position is made. The 3plus Family Association trains its employees as soon as they meet the new area. Employees and associates are instructed to study the literature, regulations, and rules independently. The association is also preparing its training related to communication strategy, and some associates also attended training related to strategic planning. During employment, every employee or volunteer undergoes an orientation process. The development of employees and volunteers of the Families 3plus is achieved through various education and training. Job rotation is also carried out to acquaint as many employees as possible with various jobs. This organization tries to keep and motivate employees with a good working environment, a focus on positive stories, and a generally affirmative approach to the association's work. The motivation of employees and volunteers is influenced by the connection with the mission of the organization and intrinsic motivation. A pleasant work atmosphere is vital in NPO. Also, good management can serve as motivation for employees and volunteers. Management should be the first to stand up for the organization's values, and among other things, it can be a good example to employees if they volunteer. The association is funded based on membership fees, projects, and donations, so there are few opportunities to motivate employees with material compensation, but it finds several ways. In addition to the basic salary, employees can receive incentives monthly depending on work efficiency. Also, the association provides employees with non-taxable benefits in the maximum allowable amounts defined by law.

Of the intangible forms of rewarding, the Families 3plus provides employees with the possibility of flexible working hours and work from home. In addition, it provides them with feedback, and they are involved in decision-making. Employees, volunteers, and associates are free to make suggestions and express opinions. The association seeks to influence their motivation by involving employees in this activity by shaping the business. In this way, the job will meet the association's needs and the employees who perform it.

## 6. CONCLUSION

HRM is an essential function of NPO – it is aimed at people who are a critical factor in any organization. NPO exist thanks to people striving to improve the community's life, so they must pay the most attention. However, keeping people in NPO is a great challenge due to the pressure of for-profit and other NPO on the labour market. Some challenges NPO face in HRM are employment, communication within the organization, and compliance with local and state employment laws. Motivating employees and volunteers in NPO is a problem, mainly because they often cannot motivate people with material compensation. Therefore, people who work in NPO usually have a strong internal motivation, but it can quickly disappear if the organization does not seek to increase it. It is important to apply various intangible forms of motivation that mean much more for some people than money. Not much research has been conducted in Croatia to determine how NPO manage and motivate human resources. Based on the qualitative research in two selected NPO, it can be concluded that both NPO apply good HRM practices and do not lag behind small and medium-sized for-profit organizations. Therefore, they conduct a job analysis, apply an interview during the selection process, train employees and volunteers, and try to retain human resources by creating an excellent working atmosphere. They also successfully motivate employees and volunteers through a combination of tangible and intangible compensation. They use monetary incentives, participatory management, flexible working hours, feedback, and recognition of success. Through the interview, responsible persons in NPO pointed out that their biggest problem is the lack of financial resources for successfully motivating and managing human resources. A limitation of this research is that the analysis of HRM and motivation in non-profits was conducted in only two NPO. In addition to the lack of financial resources, NPO in Croatia are also affected by other problems, such as the lack of workforce and lack of motivation. For this reason, future research needs to include a more significant number of NPO to get an even clearer picture of how NPO manage people and motivate employees and volunteers, considering the problems surrounding them. Also, further research is recommended to compare how human resources are managed in an international environment to see differences and opportunities for improvement in the non-profit sector in Croatia.

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## RISK ANALYSIS OF THE WORKFLOW COST IN THE MANUFACTURING INDUSTRY

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### **ABSTRACT**

*This article will show the risk evaluation and analysis in a planned workflow costs. In the presented model, a statistical quantitative method is used, which reflects the possible changes in selected stochastic factors and sets the probability of the future cost of the work flow. The model is valuable for the manufacturing industry where the product cost calculations and client offering take place in the beginning of a longer time frame and they rely on a projected future production expenses. This will help the management to take decisions reducing the risk exposure. The model could be easily adjusted among different manufacturers or departments within one company with the easy selection change of the important for the different organizations stochastic factors.*

**Keywords:** *Monte Carlo simulation, risk, risk calculation, workflow, simulation implementation, planned total cost*

### **1. INTRODUCTION**

In order to identify the risk in a process, it is necessary to go through the definitions of risk. In dictionaries risk is defined as a possibility of losses or harmful consequences. From this definition it can perceive that risk has two fundamental components: losses and uncertainty about their occurrence and quantity [10]. Risk can be broadly defined as a chance of danger, damage, loss, injury or any other undesired consequences. It is the product of two factors: Probability of an event which might occur and severity of the event if it occurs (Risk = Probability x Severity) [4]. Sometimes risks are described in a negative context like according to Society for Risk Analysis (SRA) risk is “the potential for realization of unwanted, adverse consequences to human life, health, property, or the environment...” [8]. But risk does not always result in a negative outcome since some risks are taken purely by the hope of a positive outcome. Like the acquisition of a company means major risk taking, but the risk would most likely not been taken if there was no chance of a positive effect [5]. What most authors do agree with is that risk always a state of uncertainty [5],[6],[7]. Risk Assessment is a formal and systematic approach to identify manufacturing practice risks related to equipment and supporting systems. It is a very helpful tool that can be applied to plant, equipment and systems which have been in use for many years. “Risk assessment can be defined as the process of estimating the probability of occurrence of an event and the probable magnitude of adverse effects – safety, health, or financial – over a specified time period” [9]. Furthermore, risk assessment is a process which involves some or all of the following components: potential failure identification, effect assessment, exposure assessment and risk classification [1].

## **2. RISK ANALYSIS OF THE WORKFLOW COST IN THE MANUFACTURING INDUSTRY**

The risks is accessible via the visual components per application, Project Management System network and overall risks. It is possible to start a workflow, create new actions and consequences, retrieve the responsibilities, evaluate the risk and create documents for a detailed description.

### **2.1. Calculation of risks**

The risks are defined on a set of hierarchic nodes within a plan or workflow structure where a set of algebraic expressions determine the node values for every desired future time point. The plan or workflow structures including algebraic expressions are defined by user as templates allowing for creation of individual plan instances and for plan simulation using different future risk horizon and evaluation time points within that are determined in the most cases automatically by the analysis frequency.

The defined risk structure can be evaluated as follows:

#### *2.1.1. Simple calculation*

The algebraic expressions are calculated for every workflow node and for every future time point. The basic risk factors (indicators) on the leaves of the workflow structure tree use simple forecasted values. Every node at every time point representing a matrix (nodes x time points) receive it's plan value allowing to analyze the planned development of a critical process. This development is based on some forecasting and assumptions about the future values of basic indicators. The analysis results can satisfy on the first step, but how is the risk exposing losses on one or more nodes and time points if the future values of basic indicators is variable. This can be calculated using the Monte Carlo Simulation.

#### *2.1.2. Monte Carlo simulation*

Statistic of basic risk factors (indicators) for future time points: standard deviation (volatility), correlation (basic factor x basic factor), auto-correlation (time point x time point), cross-correlation (time point x basic factor) is used to create cross-covariance matrix needed for the simulation. The statistic is calculated on discrete time points (T1, T2, T3, ... in Figure 1) where covariance matrixes are derived from value and volatility forecast (see Figure 2).

*Figure following on the next page*

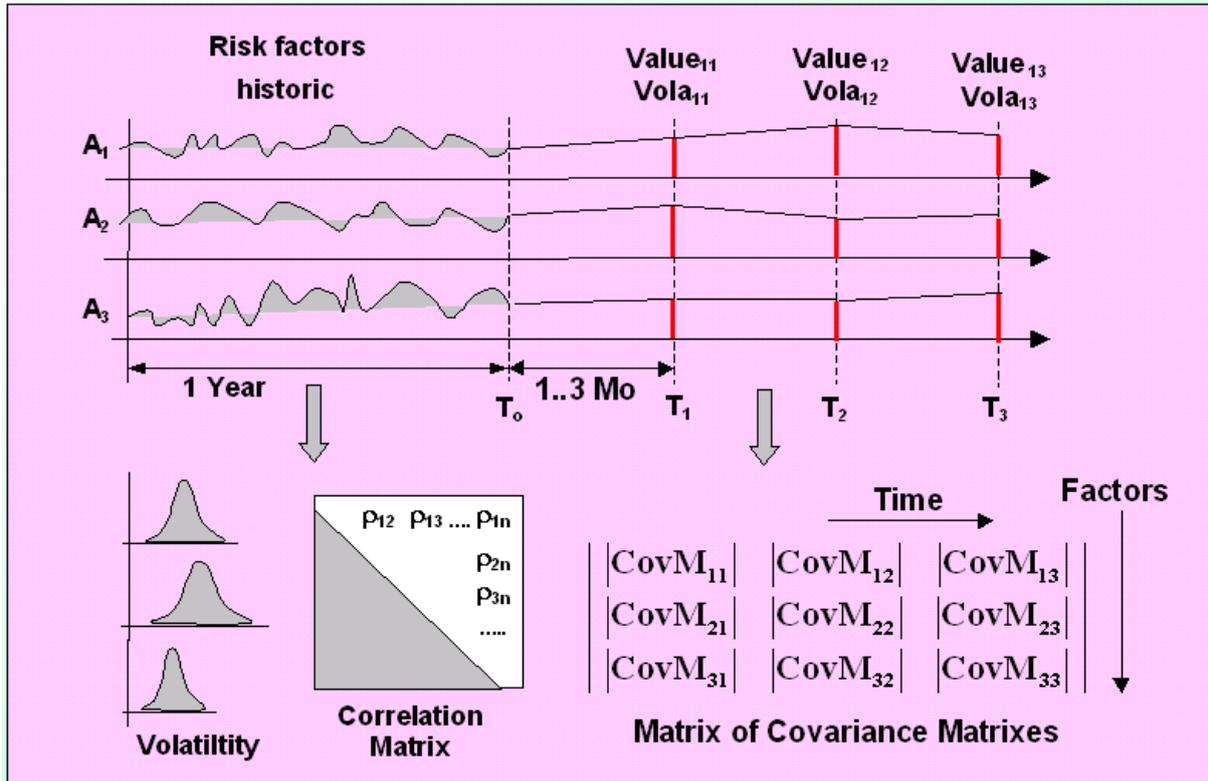


Figure 1: Calculation of simulation data on future time points

A set of normal distributed Monte Carlo scenarios (for example 5000) are generated for every risk factor and time point by random generator, the result is a scenario matrix: (factors x time points) x scenarios, for example 5 factors x 12 time points x 5000 scenarios. The matrix is then multiplied by Cholesky decomposition of the covariance matrix to receive correlated small changes of basic factors on time points. The simulation produces a large set of possible developments for the risk factors (s. Figure 3). The algebraic expressions are calculated for every workflow node, for every future time point and for every Monte Carlo scenario, so value distributions are created for every workflow node on every future time point. Risk measures are then obtained from distributions allowing to observe the risk of whole workflow and to check where are the critical points on the simulated time development. Risk measures are shown on visual components such as grids and graphics.

Figure following on the next page

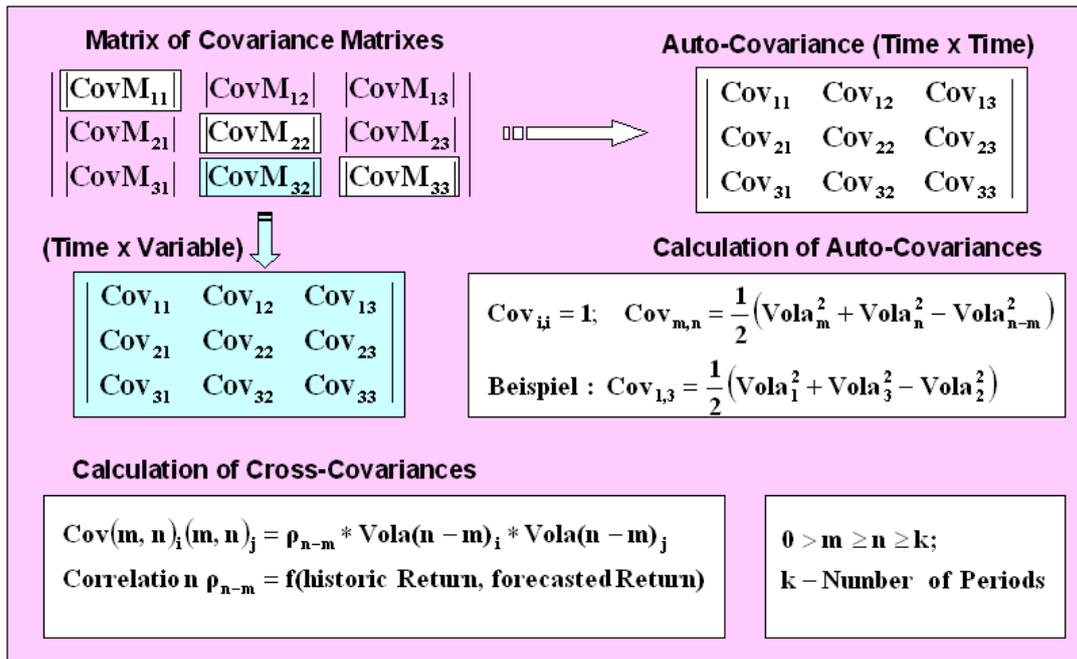


Figure 2: Calculation of Covariance Matrix

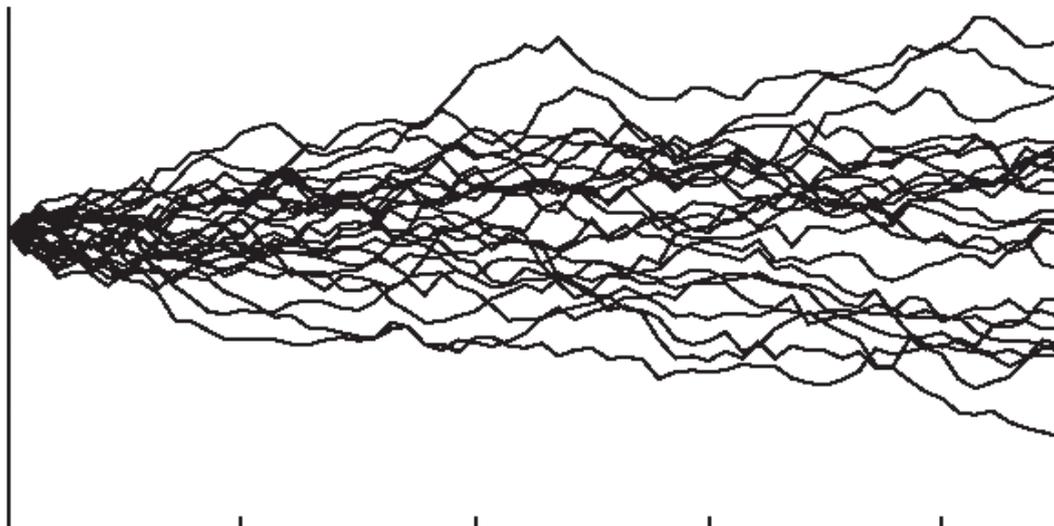


Figure 3: Possible Value Developments (Time Paths) for the Risk Factors

## 2.2. Workflow Cost Calculation and Simulation

The cost values can be differentiated into Actual Values and Scheduled Values. Scheduled Values should be edited when generating the corresponding task and Actual Values should come from the resource assigned to the task. Furthermore, costs as Scheduled Values are Fixed Costs and Total Costs, costs as Actual Values are always Total Costs.

### 2.2.1. Periodic Scheduled Costs

The simulation of the workflows is made based on analytical periods (time slices), for Example monthly or weekly within a near future (forecasting interval), for example 1 Year. Thus the workflow and corresponding costs are scanned according to chosen time slicing. The foreseen task effort is assumed by resources in small pieces in this case, so the calculation of all scheduled costs is done for every analytical period.

### 2.2.2. Scheduled Fixed Costs

These costs should be entered once, when generating the task.

*Variable Scheduled Costs = Sum of (Scheduled Effort \* Resource Hourly Rate)*  
for every resource which has been assigned to the task.

*Scheduled Total Costs = Scheduled Fixed Costs + Variable Scheduled Costs,*  
always.

*Scheduled Total Costs = Scheduled Fixed Costs (for Task) +  
Sum of (Scheduled Effort \* Resource Hourly Rate)*  
(for every resource assigned to the task). They should be overwritten by the Actual Total

Costs, when completing the task and the corresponding option is set.

### 2.2.3. Periodic Scheduled Costs

The simulation of the workflows is made based on analytical periods (time slices), for Example monthly or weekly within a near future (forecasting interval), for example 1 Year. Thus the workflow and corresponding costs are scanned according to chosen time slicing. The foreseen task effort is assumed by resources in small pieces in this case so the calculation of all scheduled costs is done for every analytical period. At begin of task the fixed costs are assigned to first task slice:

*Periodic Scheduled Costs[k] = Scheduled Fixed Costs (for a Task)*

where  $k$  is the first period of the task.

At end of every next period the Periodic Scheduled Costs is:

*Periodic Scheduled Costs[i] = Periodic Scheduled Costs[i-1] +  
Sum of (Periodic Scheduled Effort[i] \* Periodic Resource Hourly Rate[i]) \**

Task Effort Index[i]

where  $i$  is going from  $k$  to  $m$  (last task period).

The Periodic Scheduled Costs are accumulated along the time for performing the task, at end of task the task effort is assumed by assigned resources. The Periodic Scheduled Efforts and the Periodic Resource Hourly Rates can be different for different task periods. The unknown and stochastic nature of the scheduled effort, i.e. is the resource able to perform the work in the forecasted scheduled effort, can be expressed by a risk factor (here as example) Task Effort Index, that develops his expected values of about 100 % along the periods and exposes a standard deviation, for example 12% on every period end. The example Task Effort Index allows to simulate the workflow and to account for rough estimation of resource efforts needed to perform the task work. Another interesting aspect is the possibility to follow the task work periodically and in small pieces and to make decisions such as reassigning or re-planning the work or the resources on early task work stages.

### 2.3. Workflow Cost Simulation Example

Following example (see. Table 1) should demonstrate the workflow simulation approach.

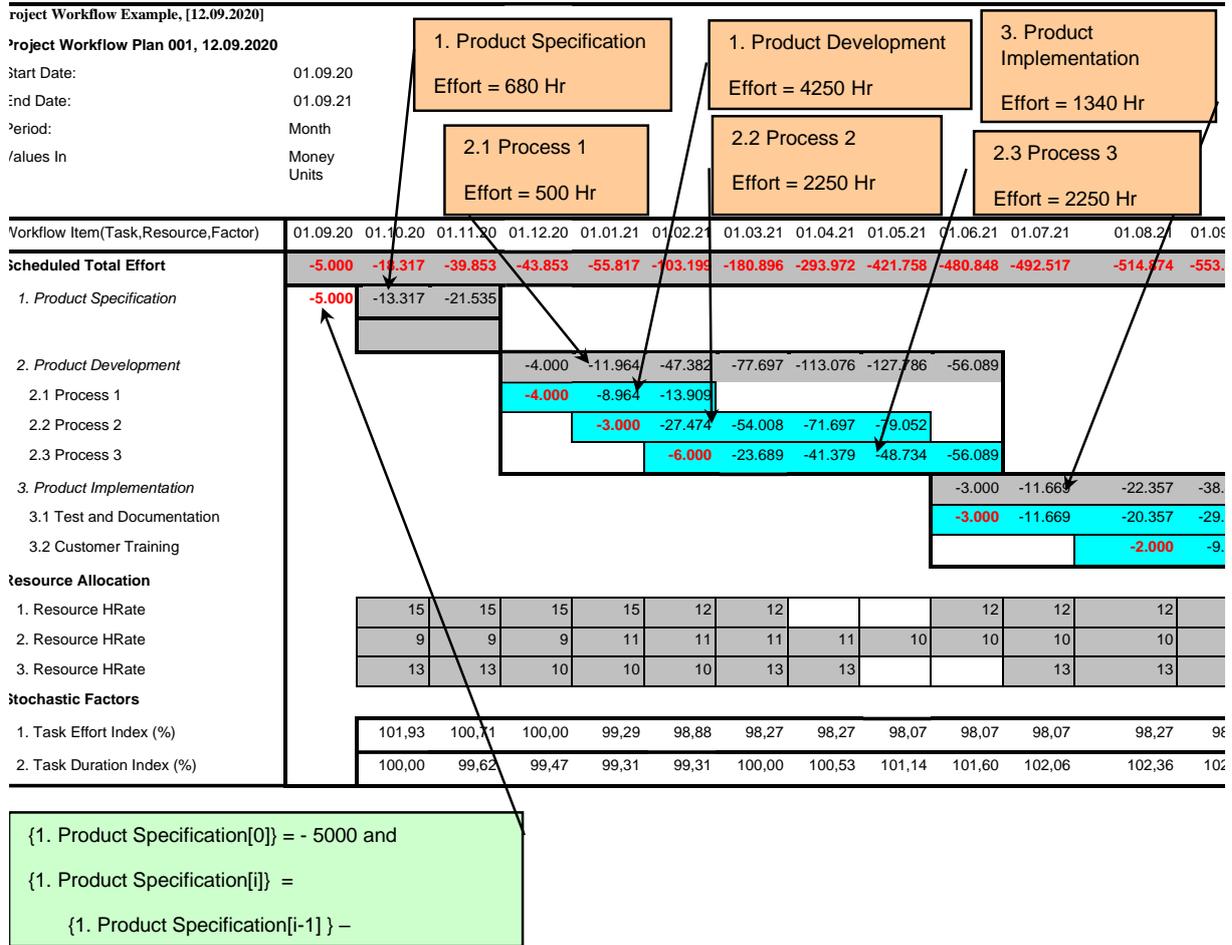


Table 1: Workflow Cost Simulation Example

A workflow describing an example software development project is analyzed and simulated for 1 Year (from 01.09.2020 to 01.09.2021) on monthly basis, i.e. for 12 analytical periods. The workflow consists of 3 consecutive main tasks (Product Specification, Product Development and Product Implementation) with associated fixed costs of 5.000, 13.000 and 5.000 Euro, efforts of 680, 3250 and 1360 hours and duration of 680, 1200 and 680 hours respectively. The Product Development and Product Implementation tasks are compound tasks consisting of parallel partial overlapping sub-tasks with following example fixed costs and efforts:

Product Development:	Fixed Costs (Euro)	Effort (hours)	Duration (hours)
Process 1	4.000	500	500
Process 2	3.000	2.250	750
Process 3	6.000	1.500	750
Product Implementation	Fixed Costs (Euro)	Effort (hours)	Duration (hours)
Test and Documentation	3.000	680	680
Customer Training	2.000	680	340

Table 2: Costs and duration of Sub-tasks

Three resources should assume the work. The hourly rates of the resources given in the Section Resource Allocation changes for different months.

The 1. Resource and the 3. Resource are busy and don't work for two months. The resources are assigned to project tasks as follows:

<i>Task</i>	<b>1. Resource</b>	<b>2. Resource</b>	<b>3. Resource</b>
<b>1. Product Specification</b>	yes	yes	
<b>2. Product Development</b>			
2.1 Process 1			yes
2.2 Process 2	yes	yes	yes
2.3 Process 3		yes	yes
<b>3. Product Implementation</b>			
3.1 Test and Documentation			yes
3.2 Customer Training	yes	yes	

*Table 3: Allocation of Resource to Workflow Tasks*

Two stochastic factors (Task Effort Index and Task Duration Index) should influence the calculation and the simulation of project costs, but in the example only the first factor is connected to simulation model. The stochastic factors represent the uncertainty of estimated task efforts, resource performance and task duration. Each stochastic factor predicts future development and volatility. This forecast is built on of a selected type of simulation (in our case Monte Carlo) based on a sufficient number of rows of reliable historical data on the change in the value of the stochastic factor we have chosen. Taking these changes into account, the expected future effort for each stage of the workflow can be presented as:

$$\begin{aligned} \{1. \text{Product Specification}[0]\} &= - 5000 \text{ and} \\ \{1. \text{Product Specification}[i]\} &= \{1. \text{Product Specification}[i-1]\} - \\ & \quad ( \{1. \text{Resource Hrate}[i]\} + \{2. \text{Resource Hrate}[i]\} ) * 340 * \\ & \quad \{1. \text{Task Effort Index} (\%) [i]\} * 0.01, \end{aligned}$$

where 5000 is the fixed cost, 340 is the monthly task effort and the  $\{1. \text{Task Effort Index}\}$  is the stochastic factor.

Risks are available through the application visual components, the project management system grid, and general risks. It is possible to start a workflow, create new actions and consequences, derive responsibilities, assess risk and create detailed description documents.

The development of the expected planned total costs for the work process is given in the Planned Total Order of Effort.

### 3. CONCLUSION

In conclusion, the following theoretical-practical conclusions can be derived:

- 1) The results of the simulation and the evaluation of the workflows provide a good basis for taking the appropriate measures to reduce the risk exposure.
- 2) The risk evaluation must be reviewed and updated continuously to keep the model alive. In particular, it should be updated following any significant changes in stochastic factors, significant changes in staffing levels or task workflows.
- 3) Even without changes, it is good practice to review the risk assessment at intervals not exceeding the selected periods (les then twelve months).
- 4) Finally, we must conclude that such quantitative mathematical models provide guidance for analysis, but due to their statistical dependence, do not give great results in force majeure market influences we have witnessed in recent years, such as COVID-19 or military invasions close by.

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## CRISIS COMMUNICATION THROUGH SOCIAL NETWORKS

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### **ABSTRACT**

*A crisis is a disorder in the functioning of something that is normal in both, the private and business world, with bad or less bad consequences. There are different causes that can lead an organization to crisis and most often they are divided into external and internal causes of the crisis. Internal causes are created within the organization itself, which can be due to poor work, disruptions to interpersonal relationships, corruption, poor working conditions, unrealistic goals, lack of communication within the organization, while external causes arise outside the organization such as natural disaster, political and social change, economic crisis, recession, market change. When meeting the crisis situation, management must take it seriously. Crisis communication is an interactive process and can be defined as the exchange of information and opinions before, during, and after a crisis outbreak. Today, social networks play a key role in crisis communication due to saving time and resources. The aims of this paper are to: describe social networks and new communication habits, to define crisis determinants and to explain crisis communication through using social networks. This paper also presents results of empirical research that is conducted in 3 oil companies in Croatia regarding crisis communication. The research has shown that internal communication within these oil companies is deprived, and that employees are not aware of what crisis communication in their companies represents for them.*

**Keywords:** *crisis communication, Croatia, oil companies, social networks*

### **1. INTRODUCTION**

When a crisis situation occurs a large number of activities are carried out in order to reduce the negative effect of the crisis situation, which is called crisis management (Pauchant, Douville, 1993). Crisis communication implies a special area of public relations that consists of predicting possible events, preparing for crisis events, communicating during crisis situations, and analyzing what has been done. In crisis situations, the public seeks answers to three questions, what happened, what is being done and what is planned to be done. A plan for crisis communication should be made, and it should be made before the crisis manifests itself. (Tomic, Sapunar, 2006). Communicating with all interested parties makes it easier for crisis management and leads to the improvement of already adopted measures (Milanović Glavan, Džajo, Mihelja Žaja, 2020). The main aim of this study is twofold. The first aim is to present an overview of the available literature on crisis communication through social networks. The second aim is to present empirical research in Croatian oil companies regarding this topic. This paper is structured as follows: first, introduction is given. Second, the theoretical background on crisis and crisis communication is explained. Third, social networks and new communication habits are described. Fourth chapter shows the results of the conducted empirical research. Finally, the discussion of the results and conclusion are given.

## **2. FUNDAMENTAL DETERMINANTS OF CRISIS AND CRISIS COMMUNICATION**

### **2.1. The concept of crisis**

A crisis is an unwanted event that always seriously threatens the continued existence of an organization, a negative change that results in a difficult and unstable situation (Hamidović, 2012). A crisis can lead to both negative and positive consequences, but in the most cases the consequences are negative because crisis situations are unpredictable. Each crisis that appears is individual and no one knows what consequences it will have on whom. Any reaction to a crisis situation must be well thought out and examined in advance so that the crisis situation does not prolong or have even worse consequences. The struggle with any crisis is not easy, and that is why the crisis should be solved by people specialized for crisis management, with a dose of caution and with experience. (Ivanović, 2014). Management must always be prepared for a crisis situation and must always have a crisis plan to resolve it. Every step to solving the crisis itself is a challenge, and every challenge requires great effort and work in order to get out of the crisis with as few negative consequences as possible. It is not easy to predict a crisis, there are many different causes of crises and none of them should be ignored or minimize the possibility of major failures and negative changes (Coombs, 2021). There are internal and external sources of the crisis. Internal sources of crisis are also known as home crises and they arise from the company and business itself, and are the most common form of crisis. If there is management incompetence, lack of planning, inappropriate business management and control, weak analysis within the company, insufficient capital, the sources of the company's internal crisis occur. External sources of crisis are sources that are caused by unfavourable environmental conditions affecting the company. Given that external sources of crisis cannot be acted upon, management must have a good crisis plan that could ensure the company's operations in time when they notice that negative changes are taking place (Stajduhar, 2020). Crises bring new orientations, determination to change behaviour, and even re-examination of current goals and possibilities. Such a way of reacting is not only borne by the management, whose main role is the maintenance and stability of realistic and achievable goals, as well as changing them in view of the newly created situation, but such a way of reacting applies to all employees, customers, suppliers of financial institutions and of course to the owners of the organization (Vasickova, 2020).

### **2.2. Crisis communication**

Communication can be internal and external. Internal communication refers to the exchange of information between employees at different levels and internal participants in the company. It can be said that internal communication is an important factor for better relations within the company. In the context of crisis communication, internal communication refers to communication within crisis management (Pijrol, 2017). External communication supports the achievement of company goals in two directions: ensuring the flow of information from stakeholders to the company and ensuring the flow of information from the company to stakeholders. The content and form of communication should strengthen cooperation between stakeholders and companies (Tankosic, Ivetic, Mikelic, 2017). During the crisis identification phase, communication plays an important role in detecting the source, cause and origin of the crisis, and it is one of the most important factors in getting out of the crisis situation. Crisis communication in crisis situations when there is the greatest pressure should be targeted and adequately reported to internal and external participants in the business process. Crisis communication actually works by communicating between companies and the public before, during and after a crisis situation (Boin, Lagadec, 2000).

There are three basic phases of crisis management, namely:

- pre-crisis phase,
- crisis response phase,
- post-crisis phase.

The pre-crisis phase is about prevention. Crisis prevention includes creating a crisis management plan, and selecting and training a crisis management team. The plan implemented by crisis management contains all relevant information and documents that can be used to document all responses to a crisis situation. The crisis management team must be properly and properly trained for any kind of communication with the public and the interpretation of questions and answers, which means that they must know how to take control and communicate, clearly present all the information they want to present, confidently appear in front of the public, get to know everyone team members with the most up-to-date information about the crisis situation, also introduce employees to the crisis and crisis activities, show concern and provide support to all victims of the crisis (Eggers, 2020). In the crisis response phase, the crisis situation has already occurred and it is necessary to act quickly, accurately and consistently. The speed of action is especially important because the public wants to know what happened, and the media will try to provide answers from whatever sources they can find. It is clear that if the company does not turn the media's attention in its favour and quickly come forward with information, it is possible that wrong information from surrounding sources collected by the media may be published, which can damage the company's reputation (Kim, Lim, 2020). In the post-crisis phase that occurs after the crisis, companies dedicate themselves to repairing the reputation that was threatened by the crisis. Also, the company returns to normal operations and the crisis is no longer in the immediate focus of management's attention. After improving the reputation, the management must come forward with news about the recovery process, and at the very end, the management evaluates the reaction to the crisis situation and tries to find solutions to improve the next encounter with the crisis (Williams et al., 2017).

### **3. SOCIAL NETWORKS AND NEW COMMUNICATION HABITS**

Digital technologies have led to a significant number of changes in the company's way of doing business. Social networks represent the most popular global communication phenomenon today around the world. Users on social networks are increasing year by year, and social networks are constantly developing in order to offer their users as many options as possible in one place. In many cases, social networks proved to be the most effective for sharing timely and accurate information. With their development, social networks have become the most represented source of information, and the biggest reason for this is that it allows users to quickly get the news no matter where they are. Social networks should be included in crisis communication plan (Deverell, 2021). It is desirable that organizations have a human or even a whole team of people who exclusively deal with the organization's social networks in crisis situations.

### **4. CRISIS COMMUNICATION THROUGH SOCIAL MEDIA: EMPIRICAL RESEARCH (STR 17-STR 29)**

#### **4.1. Research instrument**

The measuring instrument in this paper was a method of collecting data through an online survey that was made in a Google form. The purpose of the survey was to investigate the opinion and knowledge about crisis communication of employees in 3 oil companies in Croatia. Due to anonymity companies are portrayed as X, Y and Z companies.

#### 4.2. Research sample

The research was conducted in August 2022. A total sample size were 150 respondents from 3 oil companies. It was examined, through 23 questions, are the employees of these 3 oil companies familiar with their company's crisis plan. First 3 questions examined the general characteristics of the respondents and 20 questions were about their knowledge of crisis communication.

#### 4.3. Results

35.3% of the employees from company X, 32.7% of the employees from company Y and 32% of the employees participated in the research. It can be stated that the distribution of employees from all companies is very similar (Figure 1).

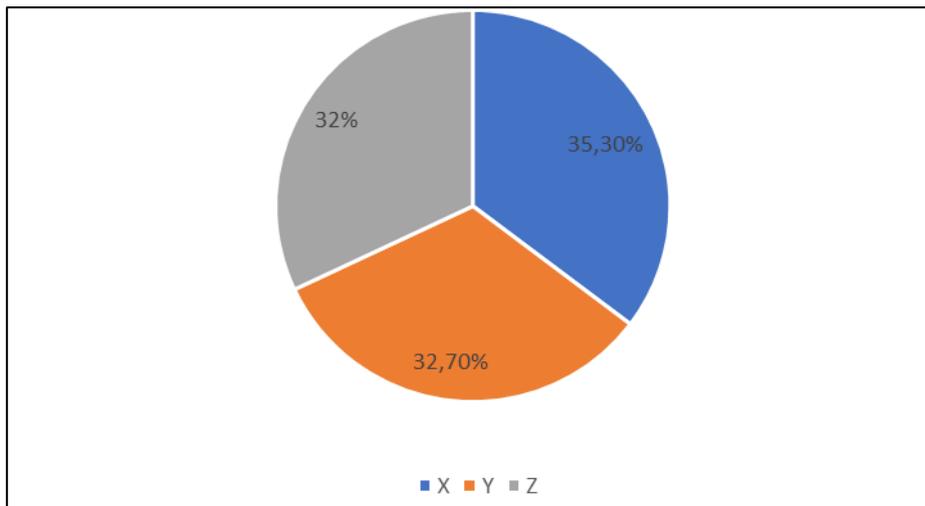


Figure 1: Distribution of respondents in oil companies  
(Source: Author's work)

Regarding employees age the conducted research has shown that in the sample there are 42.7% employees aged between 25 and 35 years, 34.7% employees is older than 35 and 22.7% of employees have between 18 and 24 years. The majority of respondents in the sample were female (66.7%). The prevailing level of education was university degree (54%) and it was followed by high school education (46%). From Figure 1 it can be seen that companies mostly use Facebook and Instagram as their social networks. Tik Tok, Twitter and Youtube are the least used networks (Figure 2).

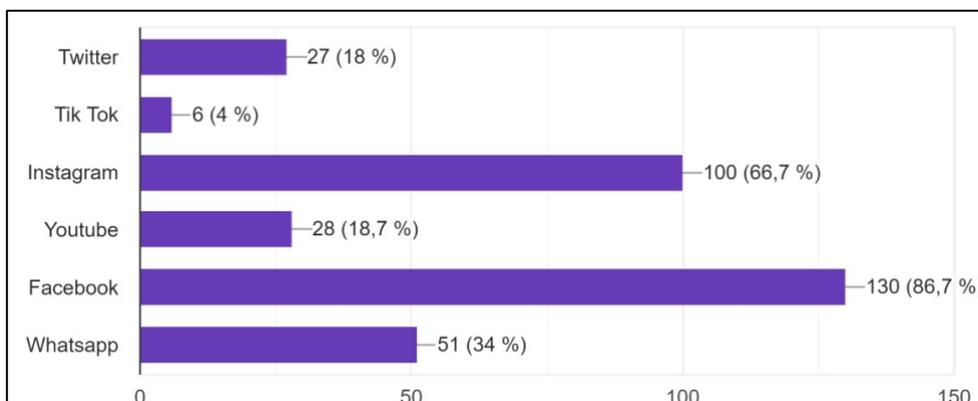


Figure 2: Social networks of oil companies  
(Source: Author's work)

40% the employees of oil companies believe that their company sufficiently communicates through the social networks on which they operate and an equal part of them think that they do not communicate enough (30%) or that they don't know (30%) (Figure 3).

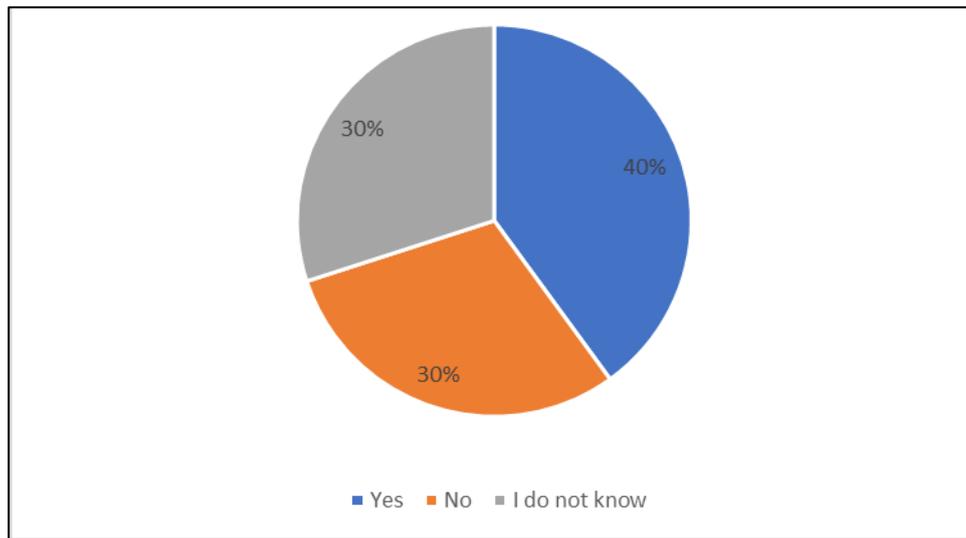


Figure 3: Regular communication on social networks of oil companies  
(Source: Author's work)

When asked about crisis communication plan the largest percentage of respondents to this question (50.7%) chose the answer that they don't know, which means that employees within oil companies were not introduced to the course of taking actions in the crisis situations (Figure 4).

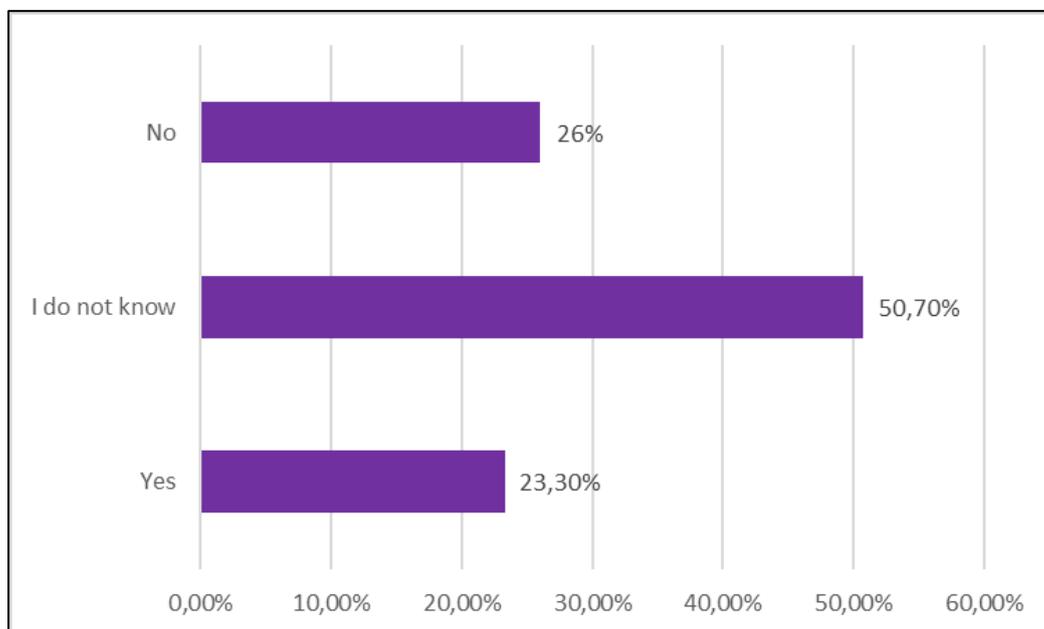
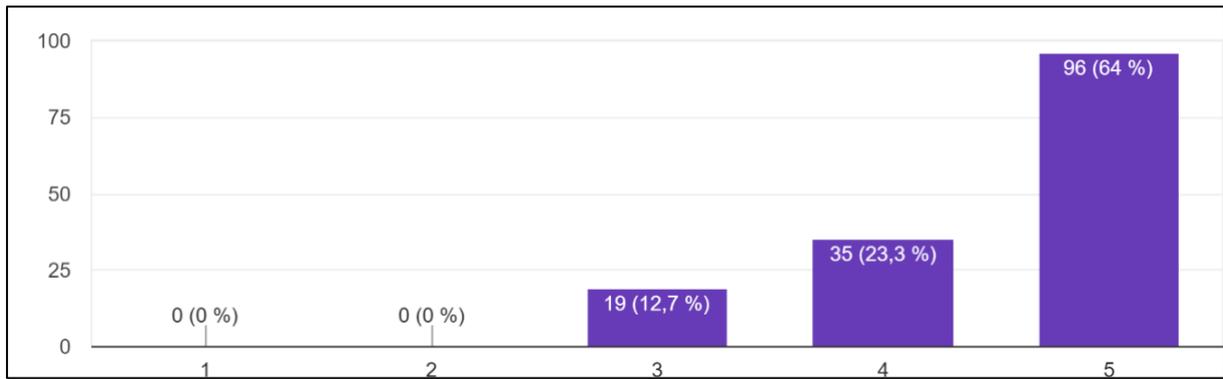


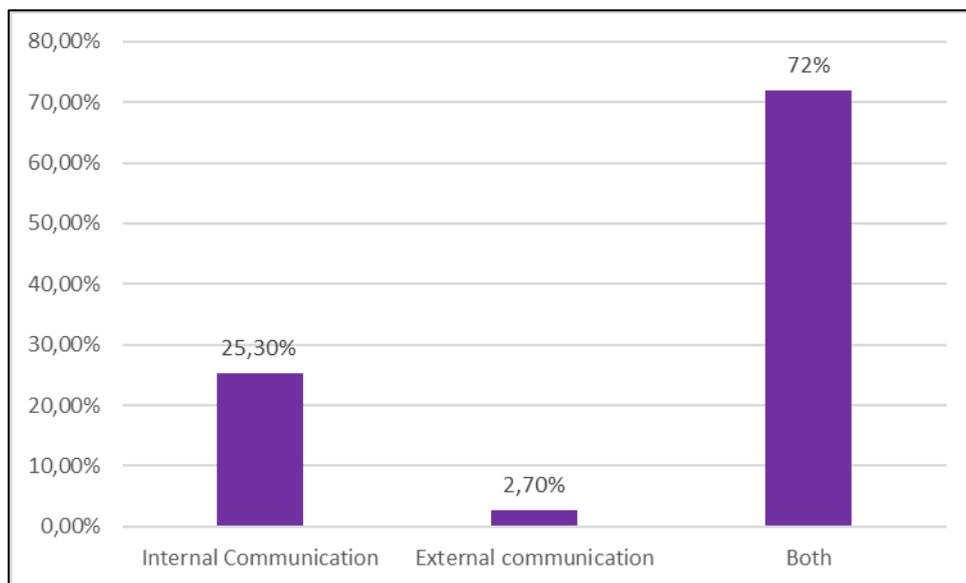
Figure 4: Crisis communication plan  
(Source: Author's work)

When asked to grade the importance of crisis communication most employees think that is very relevant (64%) (Figure 5).



*Figure 5: The relevance of crisis communication  
(Source: Author's work)*

Regarding the principles of crisis communication in times of crisis, it can be stated that the respondents have the opinion that their companies should act according to all principles of crisis communication. These principles are: taking control and communicating, presenting information clearly, introducing employees to the crisis, showing concern, introducing employees to the crisis action, providing support to other victims of the crisis and keeping up with information about the crisis. Internal and external communication in crisis situations have the same meaning and for management it means that they have to think carefully about how to approach employees and how to approach to everyone who operates in the organization's environment. The value of internal and external communication must be equal and employees of oil companies are aware of that (72%) (Figure 6).



*Figure 6: Internal vs. external communication  
(Source: Author's work)*

Crisis communication for management means that they must know how to: give answers to arising questions, explain any ambiguities, provide information about the current situation and inform about the next procedures. These are the most important steps that must be followed in crisis situations and this was also recognized by the questionnaire respondents. Nowadays crisis situations appear very often, for both, people and organizations. Oil companies are currently encountering frequent price changes that has a negative consequence for them.

They have losses due to freezing prices and they have to deal with citizens' anger because prices increase. Employees of oil companies are not completely aware of that fact (Figure 7).

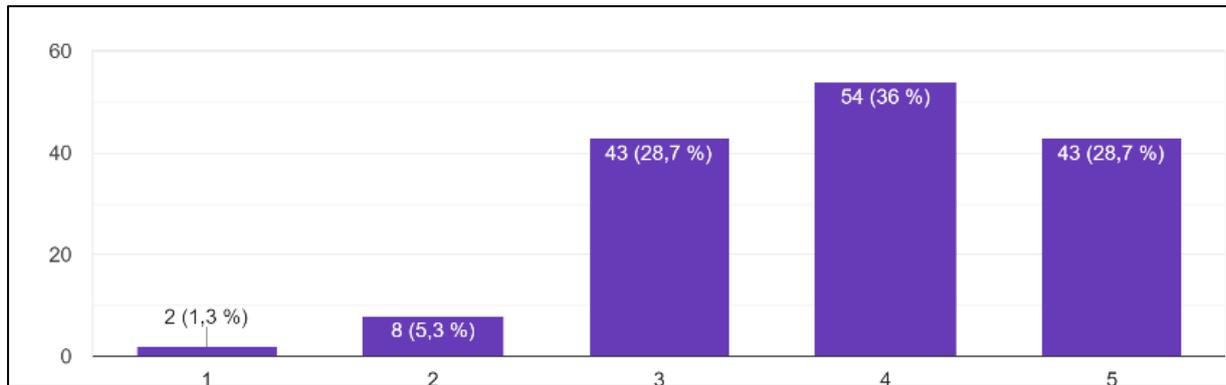


Figure 7: Do you think that the current price and gas changes represent a crisis situation for your company?

(Source: Author's work)

By going through the questionnaire, the respondents were able to learn something about crisis communication. At the end of the survey they concluded that crisis communication in their company should be designed in a better way and that more attention should be paid to the crisis communication plan (81.3%).

## 5. DISSCUSSION AND CONCLUSION

As social networks have come to life, it is increasingly important and useful for organizations to join virtual world and take advantage of easy content publishing, faster circulation of content and better connection with the rest of the world. A crisis is a situation that in most cases comes unplanned and in a large number of cases it ends with a negative outcome. Every crisis has its own cause, source and consequence, and the management is there to predict the crisis and to create a crisis plan that must be constantly upgraded. Crisis communication is communication that takes place in crisis situations, which means that if a crisis occurs situations within the organization, management must answer the public's questions about what happened, what is being done and what will be done. Crisis communication via social networks is a short and clear presentation of crisis situation in which the organization is currently located. Regular updating of information on social networks can lead to a large number of satisfied users, suppliers and employees. The results of the survey show that employees are not familiar with the operations of their company in times of crisis. For a large number of respondents crisis communication is unknown concept. Oil companies X, Y and Z should consider that today's way of communicating has a big role for their business, and the possibilities that social networks offer them should be used. Their public exposure through social media about crisis situations is minimal and does not include all the necessary steps. Also, it can be stated, that within oil companies, internal communication is deprived, and that employees are not aware of what crisis communication in their companies represents for them. Crisis communication is an important segment in crisis situations and that is why it is better for each company to provide up-to-date information. This paper presents component important for today's business practitioners, namely: crisis communication. It also presents empirical research conducted in 3 oil companies in Croatia that shows that crisis communication in them should be improved. Further research is also possible. It can include investigation on crisis communication in different business sectors.

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## DETERMINING THE VALUE NON-PRIVATISED LAND – THE CASE OF CAMPS ON THE CROATIAN COAST

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### ABSTRACT

*This paper aims to investigate the appropriateness of land valuation methods in the special case of the 'State-owned tourism plot' (hereinafter SOTP) on the Croatian coast. SOTPs were once a part of tourism real estate owned by companies that had neither been evaluated or privatised during the process of transition and privatisation in the 1990s. Since subject companies have successfully been privatised, they consequently operate various tourism related real estate that is situated in tourism zones that are not fully in their ownership (meaning that these zones include SOTPs), although both land and facilities constitute wholesome functional and technological units necessary for the operations of these properties. Valuation of SOTPs is further complicated by a number of factors, most notably the continuous commercial operations on these plots for over 60 years, investments in the plots undertaken by the operating companies since privatisation whose economic evaluation is the issue in its own right, and the fact that these plots are mixed with privately owned property on micro locations and generally don't constitute meaningful development zones that could commercially be traded on the market. Research shows that these factors make most of the common land valuation methods inappropriate, with the exception of investment/income methods. Evaluation of business generated on these plots makes the most logical basis for evaluation, where the estimation of the share of land value in total business is the critical issue. Research contributes to the possible economic evaluation methods and procedures for land plots in conditions when the market value concept isn't appropriate.*

**Keywords:** *valuation methods, non-privatized land, State owned tourism plots (SOTP), non-privatised land*

### 1. INTRODUCTION

Adriatic Croatia is one of the major European tourism regions, ranked 2nd in Europe by the nights spent by international guests at accommodation establishments in 2019 (Eurostat, 2022), despite its relatively small size and population. Most of the still existing collective accommodation establishments on the Croatian seaside were built during the 1960s and 1970s under the state's initiative through so-called social enterprises that matched the economic regime of the former Socialist Federative Republic of Yugoslavia which Croatia was a part of until 1991. With the Croatian declaration of independence and the switch to a market economy, massive privatisation processes emerged. In the process of transforming social enterprises engaged in tourism activity into share capital companies, as a rule, part of the land on which hotels, camping, resorts and other facilities were built was not fully assessed, or transferred to the capital of the companies.

After the conversion process, the facilities, as a rule, became the property of companies, and part of the land under and around the facilities became the property of the Republic of Croatia. By legal definition, SOTPs are unevaluated construction plots on which hotels, tourist resorts and/or campings are or were built on, and that constitute a functional unit with the subject development (Narodne novine, 2010). SOTPs in Croatia amounts to approximately 14.5 million sqm related to camping and 10 million sqm related to hotels and resorts. According to Kukurin and Štifanić (2022), the majority of SOTPs in camping (68,7%) is under ownership of 15 leading Croatian tourism companies by revenue and employment. The same source claims that most of SOTPs are situated in the north-western part of coastal Croatia (Istria and Primorje-Gorski Kotar county), where the majority of SOTPs, and therefore their value, is in camping. According to the same source, while SOTPs constitute the majority of land structure in the camps, all the other buildings, facilities and infrastructure are the ownership of the companies which operate these camps. Several legal initiatives since the 2000s aimed at resolving this situation have failed for various reasons. The first legal solution to the level of national law regulating SOTP and similar issues was introduced in 2010. However, most of the solutions proposed have shown to be unimplementable in practice. For that reason, the second legal solution was introduced in 2020 (Narodne novine, 2020). According to Kukurin and Štifanić (2022), the vital part of legally related SOTP issues is in determining the economic value of SOTP. Complexity of the environment and processes in which the problem occurred, and passage of time (over 20 years) make determination of the economic value of SOTP a complicated and challenging procedure. As a result, legal rights and responsibilities between the parties still aren't regulated in an optimum way, which still hampers development processes for a part of accommodation capacities that include SOTPs. The subject of this research is the calculation of the economic value of SOTP in camping that, in the process of conversion, i.e. privatisation has not been assessed and thus didn't enter into the share capital of companies, however it is still used for commercial camping by the subject companies.

For the purposes of this paper, the following definition of the term will be used. SOTP is a plot:

- that has not been assessed in the value of the social capital of a social enterprise in the process of conversion, that is, which is not entered into the share capital of the company in the privatization process;
- for which spatial planning determines the tourism accommodation purpose and the land on which the buildings for tourist purposes (campsites, hotels and tourist resorts) are built;
- on which tourism companies have the right of use, management and disposal.

## **2. VALUATION CONTEXT**

The issue of SOTP in Croatia has been controversial since the conclusion of the privatisation processes in the 1990s with several legislative attempts aimed at its resolution. Companies (users) were much more risk-averse to invest in these zones due to the perceived legal uncertainty, while the various Governmental levels couldn't count on steady concession incomes since the actual conditions continuously changed through negotiations between the stakeholders, sometimes regardless and in contradiction with the actual legal framework. Previous legislative attempts have been hampered by the inherent complexity of the issue, which has been further complicated by the passage of time, low competitiveness of the relevant elements of Croatian public sector capacity (Croatia is ranked 136th in the world by Efficiency of legal framework in challenging regulations indicator, according to WEF, 2019), and sometimes conflicting interests of the affected companies.

The last legal solution from 2020 (Narodne novine, 2020) with the accompanying set of bylaws introduced the following:

- The fee for usage of SOTP is calculated based on the simple formula where the total size of SOTP used by a company is multiplied by the fee that is to be defined in a bylaw, thus avoiding any complex calculation methods to be applied by public sector institutions;
- The existing users (companies) as defined as the preferred users of these land plots, i.e. they are granted the priority in acquiring (de facto retaining) 'tourism construction plots' for the following 50-year period.

Tourism companies have reached a historic peak in business performance in 2019 with nearly 2.7 billion EUR in revenues and 200 million EUR profit before taxation (FINA, 2022). Profit includes total SOTP fee cost at over 12 million EUR, or 6.3% of profit before taxation (FINA, 2022). These results include all tourism companies, where some of them are users of SOTP in various amounts, while the other aren't. In such a setup, the key issue is the selection and methodological setup of the most appropriate valuation procedure whose result should be the basis for setting the fee by a relevant bylaw. In doing so, the following key questions emerge:

- What kind of value does SOTP present in this case, given the circumstances?
- What valuation methods are appropriate given the type of value?

The following are the most relevant circumstances that provide a starting point for answering the previously identified key questions:

- SOTP isn't construction land in tourism zone, but land plots that are in the long-term use by tourism companies as a consequence of particular privatisation model and processes in Croatia.
- SOTPs are in general mixed with privately (company) owned property in micro locations and generally don't constitute meaningful development zones that could be commercially traded on the market.
- There have been continuous commercial operations on these plots for more than sixty years, from the period, even before the occurrence of the issue during privatisation, until present.
- For more than 25 years, companies have made various investments in infrastructure, landscaping and other elements that influence the land value, which significantly varies between various SOTP.
- Given the political and methodological dimensions of the issue, it would be very hard to apply complex multiparameter methodologies that would provide significantly different valuation results for different plots.

According to the previous legal framework that was in place from 2010-2020 (Narodne novine, 2010), the SOTP fee for the camps was determined in the following way:

- Fixed fee amounting to 0.4 EUR per sq.m;
- Variable fee amounting to 2% of the total revenue generated on the subject land, where the exact value is determined based on the share of the SOTP in total land of the given camp;

*Table following on the next page*

Number of accommodation units	42,495
Total annual revenue of camps (EUR)	216,958,923
Camping EBITDA (EUR)	114,443,671
Total area of camping (sqm)	15,792,853
SOTP area (sqm)	10,849,690
SOTP camping fee paid (EUR)	6,022,607
Fee as % of Revenues	2.8%
Fee as % of EBITDA	5.3%

*Table 1: Business indicators of companies with camps on SOTP for 2019  
 (Source: Croatian Financial agency -FINA, own research)*

According to table 1, the total fee paid for the camping component of the tourism construction land in 2019 amounted to approximately 5% of EBITDA and 2.8% of camping revenues realised, or on average 0.56 EUR per sqm of land. Given these indicators, there is a general consensus of that these fees should be increased on the account of more stable and durable concession terms that would allow for more legal certainty and related investments.

### 3. LITERATURE REVIEW

#### 3.1. Definition of value

Most of the relevant literature on land valuation focuses its definition around the concept of market value of the valuated property (Demetriou, 2016; Pagourtzi et al, 2003). According to European valuation standards (TEGOVA, 2020, p27), market value is defined as:

*‘The estimated amount for which the property should exchange on the date of valuation between a willing buyer and a willing seller acting independently of each other after proper marketing wherein the parties had each acted knowledgeably, prudently and without being under compulsion.’*

In general, land value can be determined in the process of buying, selling, leasing or taxing it, or when there is a need to calculate assets held by an individual or business (Dale and McLaughlin 1999). In that sense, European valuation standards (TEGOVA, 2020) propose several types of value other than market value, which are summarised in table 2 below.

Type of Value	Description / difference compared to ‘Market value’
Fair Value	Limits the marketplace to specific, identified participants in an actual or potential transaction.
Special Value	Opinion of value that incorporates consideration of characteristics that have a particular value to a Special Purchaser, where Special Purchaser is an individual for whom the property has a higher value than for other market participants.
Synergistic Value	A particular class of Special Value when the total value of several properties (or of several legal interests in the same property) combined is greater than the value of the sum of their parts.
Investment value	The value of a property to an owner or prospective buyer, calculated on the basis of their individual investment criteria.
Mortgage landing value	The value of immovable property as determined by a prudent assessment of the future marketability of the property
Insurable Value	Insurable value is the cost of replacing the damaged property with materials of like kind and quality without any deduction for depreciation
Value for local and national taxation purposes	Defined by particular national, regional, or local tax regulations and/or commissions
Value for compulsory purchase and/or compensation	Value defined arbitrarily by the Governments for the purposes of compensations for acquiring private land for various public interests.

*Table 2: Types of value in valuation processes  
 (Source: Adopted from European valuation standards TEGOVA, 2020)*

### **3.2. Method of valuation and international practices**

Pagourtzi et al. (2003) proposed the following list of land valuation methods:

- traditional valuation methods: comparable, investment/income, profit, development / residual, contractor's / cost, multiple regression, stepwise regression;
- advanced valuation methods: artificial neural networks, hedonic pricing, spatial analysis, fuzzy logic, autoregressive integrated moving average (ARIMA).

Previous studies related to valuation have been focused around agricultural land consolidation schemes (Demetriou, 2016; Choumert and Phélinas, 2015), valuation of urban land (Agosto, 2017), general land valuation methods for a country (Li et al, 2021), determining land economic value for the purposes of urban planning development (Rodas et al, 2018), and determining economic benefits in urban regeneration programs (Della Spina et al, 2020). Considering tourism related valuation studies, Bykova et al. (2020) used expert evaluation and multiple regression for the purpose of land valuation in the resort area of Anapa. They have found the following factors determining land prestige by weight: proximity to the seacoast with public beaches, availability of entertainment venues, environmental quality, hotel ratings, population density, opportunity to install utility lines and microclimatic conditions. A specific guide for valuating seasonal campgrounds in Ontario (MPAC, 2016), suggests general approaches of direct (sales) comparison approach, income approach (or, as the authors emphasize more accurately, the income capitalization approach), and cost approach methodological steps. However, in this case, the cost approach is favoured and provided in more detail. With regards to the most common issues that arise from mass land evaluation processes (since valuation of SOTP is such a case by all relevant parameters), Sipan et al (2012) examined the case of agricultural land and concluded that any land valuation method that may produce significantly different results for various plots, regardless of the method (i.e. whether it is based on algorithms or evaluation commissions), threaten to produce counter-productive results. Due to the very specific situation of this particular valuation process, analysis of the previous research related to valuation has proven to be limited for the purposes of resolving methodological and other issues, so research includes the additional section related to specifics of relevant legal framework and previous arguments related to the SOTP issue.

### **3.3. Croatian legal framework and views on the subject**

Croatian Law on real estate appraisal (Narodne novine, 2015) defines three evaluation methods: comparable, income and cost method. The choice of the method depends on the type of real estate and should take into consideration the existing business practices and other conditions of the particular case. As a simple method that does not require mathematical modelling, a comparable method is the most represented in common real estate transactions, where it is usually based on the simple transaction statistics for the chosen period. Uhlir and Majčica (2016) contest the idea of using the concept of market value and deductive method for SOTP valuation with the argument that market value and thus the comparable method are appropriate when the prospectus purchaser/investor has liberty in determining the concept and business model of the land that is a subject of appraisal. However, in the case of SOTP, the concept and business model are determined by the fact that the legal definition is already set in a way that state and tourism companies are de facto partners in a business. Therefore, the value of SOTP as a business stake of the state of Croatia as a business partner should be determined on the basis of economic (income), rather than land transaction evaluation. Kukurin and Štifanić (2022) argue that implementation of a comparable method in determining SOTP rental fee isn't appropriate, since historically there haven't been any transactions of SOTP. Data available refers only to transactions of privately owned land in dedicated camping zones that are usually standalone parts of land that make a meaningful developable unit on their own, and thus differ

significantly from SOTP. In that sense, significantly higher price level should be expected when evaluating SOTP through comparison with standalone real estate units. The same authors assess that the initial evaluation process was based on the expected future value of construction plots and buildings, and had not been founded in economic value of business at the time of valuation (early 2000s) but was an estimation of the future value when significantly better business parameters were expected. As the time passed, it became clear that the chosen evaluation methodology only complicates the issue of SOTP assessment. Companies have continued to invest in assets and business, where it is impossible to enhance the business value without investments that would also affect the value of SOTP, i.e. land on which buildings, facilities and infrastructure are situated. Since all of these subsequent investments have been made by tourism companies that operate camps, it would imply that tourism companies are responsible for a substantial part of the economic value of camping, regardless of the fact that the majority of the land ownership in camping is public. In that sense, the value of SOTPs decreases significantly when separated from company assets, primarily because they can't actually be marketed to third parties through sale or lease. They conclude that it is the best, if not only, interest of Republic of Croatia to sustain SOTP as a part of a functional unit in which tourism companies are owners of buildings and other real estate necessary for operations of hotels, camping and tourist resorts.

#### **4. METHODOLOGY AND HYPOTHESIS DEVELOPMENT**

As shown in the literature review, understanding of the type of value in the valuation process largely determines the optimum valuation methodology. On the other hand, the understanding of the type of value is, in practical terms in this case of little importance, since this is in fact a matter of political negotiations given the importance of both the issue and the subject companies to the Croatian economy. In that sense, three different methodologies were applied in order to assess SOTP:

- Comparable method based on understanding that SOTP presents market value in this case;
- Times-revenue method as an income valuation method that assumes SOTP presents special or synergistic value where the business is the only possible item to be valued;
- DCF method, also an income valuation method, that assumes SOTP presents special or synergistic value where the business is the only possible item to be valued.

##### **4.1. Comparable method**

Comparable method has been implemented as an indicative and the most common real estate appraisal method, regardless of previous discussion, and in order to test the possible differences in comparison to other methods. Data was collected from the national eNekretnine portal that records all real estate transactions in the country. The following methodological steps were applied:

- Sale transactions on Croatian coast in the given zoning (in Croatia, camping zones are given T3 designation according to spatial plans) recorded over 3 years (2017, 2018 and 2019);
- The mean price per sqm of the given transactions has been taken into consideration for further calculation processes;
- In order to determine the relationship between the mean sale transaction price and the potential concession fee, a 5% interest rate has been determined according to relevant benchmark values (TEGOVA, 2020), increased for additional 10% to incorporate land management costs;
- Finally, the annual concession fee per sqm is determined based on 5.5% of the average sale transaction price over the three years (2017, 2018, 2019).

#### 4.2. Times-revenue method

Times-revenue method uses the formula:

$$RV = R_i \times M$$

Where RV – revenue value,  $R_i$  – annual revenue of the subject property, M – multiplier.

Times-revenue method has been chosen as one of the valuation methodologies that is simple calculation wise, where all of the necessary data is easily publicly available from the following sources:

- Annual revenue of the subject property can be obtained by the company financial report, where there is also a special case when a company has a single facility in portfolio which further simplifies the procedure. Following the relevant methodological instructions (TEGOVA, 2020), annual revenue of the subject property ( $R_i$ ) is calculated as EBITDA, where in this case the concession fee paid for SOTP to Republic of Croatia is added as it directly results in the increase of annual revenue;
- Multipliers for a given company are derived from data retrieved from Zagreb Stock Exchange (2022) on the average value of a given company for three years (2017, 2018 and 2019), i.e. multiplier = company valuation (economic value) / EBITDA, which can be considered as independent from any relevant parties (the state of Croatia, companies included).

The following methodological step is to determine the exact value of the land in the subject camping business, i.e. the share of revenue value (RV) that is allocated to land value. There is a lack of relevant market data on the structure of investment in camping sites. However, data on hotel investments (HVS, 2021) shows that the land value is typically around 10% of the investment value for greenfield hotel investments. Understanding the difference between the camping and hotel accommodation business, for the purposes of both income methods used during the valuation in this paper, a share of land value in the total camping business of 15% will be used. Finally, in determining the relevant interest rate, the former value of 5.5% (interest rate + land management costs) as in a comparable method will be used.

#### 4.3. Times-revenue method

According to DCF method, the value of the operating business is equal to the discounted value of its expected future free cash flow, following the formula:

$$DCF = \frac{CF_1}{1 + r^1} + \frac{CF_2}{1 + r^2} + \dots + \frac{CF_n}{1 + r^n}$$

Where DCF – discounted cash flow (total value),  $CF_i$  free cash flow in a year  $i$ ,  $r$  – discount rate

For the purpose of valuation, a projection of future operating profit (EBITDA) was made over a period of 10 years of operation. Considering the available data, EBITDA was taken as the best fit for the calculation of cash flows. However, following the methodological recommendations for tourism and accommodation,  $CF_i$  is calculated through the deduction of FF&E (fixed furniture and equipment), which is assumed at the benchmark value of 4% of total annual revenue, from expected EBITDA margins. Stabilisation of campsite operations (if there is an imminent stabilization of the pandemic) is assumed to normalize over two years and return to the levels of 2019.

After the observed period, an inflation growth assumption for EU-28 countries (<https://ec.europa.eu/eurostat>) was applied. The discount rate at which the expected future free cash flow is reduced to today's value reflects the opportunistic cost to all capital advancers, weighted on the basis of their relative share of the total capital of the project. Such a discount rate represents the weighted average cost of capital (WACC or "weighted average cost of capital"). In the particular case, the discount factor used is 10%, which is common in valuations based on the DCF method applicable in the region. Since we have projected free cash flows in the 2022-2031 period, to assess the expected financial performance after the last projected year (the so-called "continuing value" or CV - the rest of the value of the project), we used the standard "perpetuity" formula based on the calculation of the free cash flow (FCF) in the year following the last projected year, and capitalisation rate that is reduced by the sector's assumed annual growth rate in the future period (2%). Finally, the same values for the share of land value in total business (15%) and interest rate that will determine an annual concession fee from economic value (5.5%) as in other methods have been applied.

#### 4.4. Hypothesis development

The focus of this paper is to assess various valuation methodologies in determining the economic value of land in campsite businesses in a specific and rather complex scenario. As shown earlier, each of the methodologies is related to a certain interpretation of value that SOTP presents in this case. It is expected that different methodologies will lead to a different result, where they may differ significantly with similarly different impact on the included stakeholders. Applying the market value concept may be of short-term interest to governmental structures due to the increased performance of the real estate market on the Croatian coast (Matić, 2021) in recent years. This fact, together with suggested methodological details for all three valuation methods proposed, leads to the first proposed hypothesis:

- *H0 Valuation of SOTP at market value and related valuation methodologies will produce higher results than treatment of SOTP at special or synergistic value.*

Furthermore, 2013-2019 has been seen as one of the periods of the highest increase in tourism activity in both arrivals and revenues globally (UNWTO, 2022), where southern Europe has recorded higher rates than average. It is logical to assume that such a result will also reflect into accommodation industry performance. Since times-revenue method proposed in this paper is based on pre-COVID 19 pandemic EBITDA performance, which can at this point of time be understood as one of the best recent periods in the tourism business, DCF method will in turn inevitably incorporate realistic long-term scenarios. This reasoning leads to the second hypothesis:

- *H1 Valuation of the SOTP by times-revenue method will produce higher results than valuation by DCF method.*

## 5. RESULTS

The mean sale transaction price per sqm in camping (T3) zones realised on Croatian coast in 2017-2019 period* (EUR)	45
Annual concession fee per sqm at 5.5% of the transaction fee (EUR)	2.48
Monthly concession fee per sqm (in EUR)	0.21

*Table 3: SOTP valuation results by comparable method  
 (Source: Own research, except for \* eNekretnine portal, 2022)*

Application of the comparable method would effectively mean an average annual concession fee of 2.48 EUR per sqm or nearly five times more than the average concession fee of 0.56 EUR per sqm actually charged in 2019.

Ri – total annual revenue of the subject properties	120,466,278
M - average multiplier of the subject companies for 2017, 2018 and 2019	9.73
Rv – revenue value of the subject properties in EUR	1,172,139,567
Total area of the subject camps in sqm	10,849,690
Value per sqm (Rv / area) in EUR	108
Land value in camping business at 15% of total business in EUR	16.2
Interest rate	5%
Land management rate	10%
Total interest rate	5.5%
Annual concession fee per sqm in EUR	0.89

*Table 4: SOTP valuation results by times-revenue method  
 (Source: own research based on data provided by the subject companies)*

Valuation performed by times-revenue method leads to the annual value of the concession fee for SOTP at 0.89 EUR per sqm, which is a substantial increase of 59% compared to the fee paid in 2019. However, this valuation as expected provides substantially lower value compared to the market value concept valued by a comparable method.

	EBITDA - free cash flow equivalent (EUR)	FF&E (4% of total revenue 2019-2020), 9% EBITDA for the remaining period (EUR)	EBITDA deducted for FF&E (free cash flow equivalent) (EUR)	Discount rate	Net present value (EUR)
2022	117,254,040	-10,552,864	106,701,176	1.0000	106,701,176
2023	118,426,580	-10,658,392	107,768,188	1.1000	97,971,080
2024	119,610,846	-10,764,976	108,845,870	1.2100	89,955,264
2025	120,806,955	-10,872,626	109,934,329	1.3310	82,595,288
2026	122,015,024	-10,981,352	111,033,672	1.4641	75,837,492
2027	123,235,174	-11,091,166	112,144,009	1.6105	69,632,606
2028	124,467,526	-11,202,077	113,265,449	1.7716	63,935,393
2029	125,712,201	-11,314,098	114,398,103	1.9487	58,704,315
2030	126,969,323	-11,427,239	115,542,084	2.1436	53,901,235
2031	128,239,017	-11,541,511	116,697,505	2.3579	49,491,134
2032	117,254,040	-10,552,864	106,701,176	1.0000	106,701,176
Terminal value (EUR)					618,639,174
Revenue value of the subject properties (DCF method) (EUR)					1,367,364,158
Revenue value of the subject properties per sqm (DCF method) (EUR)					126.03
Land value in revenue value at 15% of the business (EUR)					18.90
Total interest rate (interest rate + land management fee) (EUR)					5.5%
Annual concession fee (EUR)					1.04

*Table 5: SOTP valuation results by DCF method  
 (Source: own research based on data provided by the subject companies)*

The valuation performed by times-revenue method leads to the annual value of the concession fee for SOTP at 1.04 EUR per sqm, which is slightly above the valuation performed by the times-revenue method.

	Total EBITDA of camps in subject companies in 2019	Total concession fee paid for SOTP in 2019	Total annual concession fee paid for SOTP as per comparable method	Total annual concession fee paid for SOTP as per times-revenue method	Total annual concession fee paid for SOTP as per DCF method
In EUR	114,443,671	6,022,606	26,907,230	9,656,224	11,283,677
% of 2019 EBITDA	100%	5.3%	23.5%	8.4%	9.6%

*Table 6: Implications of the application of various valuation methodologies  
 (Source: own research based on data provided by the subject companies)*

Table 6 shows the implications of the application of various valuations on company results as expressed as the cumulative EBITDA margin of the camping business of the affected companies for 2019. Understanding that 2019 was a record year for the tourism business and that EBITDA margins halved in the COVID 19 pandemic troubled 2020 season, these effects relative to EBITDA would double in ratio for that year, illustrating the possible effects on sub-par years of the tourism business.

## 6. DISCUSSION

Results show significant differences from the existing fees paid compared to any of the applied valuation procedures, especially the comparable method that treats the subject land plots according to the market value concept. In that sense, hypothesis H0 has been confirmed. However, hypothesis H1 is rejected, since the DCF method values subject land plots slightly higher than the times-revenue method, although times-revenue method is based on the annual financial results for years (2017, 2018 and 2019) that are generally considered as the recent peak for the global tourism industry. The application of market value in similar situations has shown to have no precedent in previous practices that have been scientifically covered. However, as literature review shows, these practices have been limited mostly to agricultural land. Differences between land valuation results by different methodologies confirm the initial assumption that the crucial conceptual input is the understanding of value that is a subject of valuation in the case of such complex valuation cases. These practices outline political and social sensibility in any large-scale land valuation process, which is also inherent in this case. Considering the issue of the type of value that SOTP presents in this valuation case, the following arguments should be considered:

- SOTPs are mixed with plots in private (company) ownership and rarely make meaningful (and thus tradeable) zones on their own;
- Companies have been operating these plots for over several decades, gaining market image and operational know-how, eventually becoming internationally renowned camping operators. In that sense, trading or renting these land plots isn't likely to produce higher long-term effects for the local community, since zoning assumes that any other operator will be limited to camping concepts (T3 zones according to Croatian laws);
- For any decision on the fee level, an analysis of the impact on the economic result of the companies/properties has to be done, while the only real value of the SOTP is closely linked with the value of the business performed on that land;
- Companies have invested in subject land plots, increasing the value, as well as adapting subject land with its infrastructure and configuration towards its unique concepts.

All of the applied methodologies include assumptions that impact the valuation results. During the analysis and valuation process, the following valuation parameters have shown to be the most critical and sensitive:

- There is no appropriate historical transaction data on SOTP since it has never been traded and SOTP by the most relevant characteristics significantly differs from the common camping ground for which transaction data has been used for comparable method. This is most likely the substantial driver of the difference in valuation results between a comparable method and the other two methods;
- The share of land value in total camping business/investment where there is no reliable data or research, so the value typical for hotel business has been increased by 50% as the basis for this research to reach the share of 15%. Related sensitive analysis is simple due to the linear effect of this parameter on valuation result;
- The average value of all land transactions in camping zones for the comparable method has been applied as the only available data. Given the size of the subject camping zones, which are among the largest in Croatia, it can be argued that only transactions for the comparably large plots should be taken into consideration. As a rule, the price per sqm decreases with the plot size, so it is possible that such an approach may lead to over-valuation;
- There is some variance in the value of the multiplier between EBITDA and company value, where the average for three years for companies included has been 9.73 with a standard deviation of 3.12. Multipliers for Croatian tourism companies are significantly above the average for all industries, mostly due to typically healthy financing structures (low indebtedness) and significant real estate ownership, where apart from SOTP, all other real estate that is being operated is in 100% ownership of the subject companies;
- Projections of discounted cash flows are problematic in times of global turmoil, which is in 2022 the most intensive in decades, due to the still unresolved COVID 19 pandemic and global reset caused by war in Ukraine. The same can be applied for expected interest rates for the coming period, where there is no meaningful consensus by international institutions as of the first half of 2022.

Analysis of the effect of the potential fees on the subject company's financial results as compared to their EBITDA margins shows that the application of a comparable valuation method is critical even in the most successful years of business, especially since the overall EBITDA margin of their camping business is taken into consideration. Finally, this research provides evidence that market value is a suboptimal concept to be applied in cases where there are previous long-term historical relations between an owner (lender) and user/operator, and where the latter has made substantial investments over several decades. The significance of such land in the context of the national interests of Croatia is further amplified by the fact that tourism contributes over 17% (MINT, 2022) to gross domestic product and where more than 90% of tourism activity is realized on the coast. In such an economic structure, tourism land should be understood as a key national resource, where the general interest should be maximizing returns, while strictly controlling any risks of possible degradation and suboptimal concepts. Finally, in such conditions application of synergistic value for valuation of SOTP seems the most appropriate, since the state of Croatia and the companies that utilize SOTP act as long-term partners in the camping business on the Croatian coast.

## **7. CONCLUSION**

This paper examines the concept of value in the case study of SOTP in Croatia. The issue arose from the unfinished privatisation processes during the 1990s where the state remained the owner of the subject land, while the newly formed private companies became operators of large camps on the Croatian coast.

For the purposes of research, the concept of market value and special/synergistic value have been applied with corresponding valuation methodologies. The results show substantial differences in valuation results, depending on the concept of value and methodology applied. All of the methodologies applied include further assumptions and inputs, with several being difficult to assess due to the lack of previous valuation practices and/or lack of reliable market data. Most of these can potentially seriously impact valuation results, which are again prone to change with time due to changing conditions in the real estate and tourism markets. Research also shows that the application of market value as the basis for valuation in cases where there are complexities on the subject of valuation and the long-term relation between the owner and the user isn't the optimum concept. Valuation of business realised on the subject land plots remains the most logical approach, where the subject land should be considered at synergistic or special value. The limitation of the research is in the lack of previous practices and reliable data for any of the applied valuation methodologies. Furthermore, the scope and importance of the SOTP limits the complexity of the possible methodologies due to the risk of political and legal issues that have already delayed resolution of the issue in the past. Literature review shows that massive land valuation processes frequently raise political and related issues. Recommendations for future research relate to extending and verifying methodologies applied, as well as to standardizing and improving inputs and data sets on which this paper is focused, such as historical real estate transactions and business performance.

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## QUALITY DIFFERENTIATION AND BARGAINING AGENDA

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### ABSTRACT

*In a vertically differentiated unionised Cournot duopoly, this paper compares the equilibrium characteristics of the two main union-firm negotiation agendas, i.e., right-to-manage vs efficient bargaining. It is shown that vertical product differentiation leads to a partial solution of the conflict of interest regarding the bargaining agenda, leading to a common interest among the parties toward the right-to-manage in the absolute disadvantaged firm.*

**Keywords:** *Efficient bargaining, Firm-union bargaining agenda, Quality differentiation, Right-to-manage*

### 1. INTRODUCTION

As the growing literature on unionised oligopolies shows (e.g., Dowrick, 1989; 1990; Horn and Wolinski, 1988; Correa-Lopez and Naylor, 2004), unionism is crucial for the outcomes in the product market competition. Thus, different union–firm bargaining institutions can have different effects on markets and society. The two main arrangements are the right-to-manage (henceforth, RTM) model in which companies and unions negotiate over wages, but firms retain discretion over setting the employment level (Nickell and Andrews, 1983) and the efficient bargaining (henceforth, EB) model in which both wages and employment are simultaneously negotiated with unions (McDonald and Solow, 1981). On the one hand, the early contribution of Dowrick (1990) states that firms prefer RTM negotiations. On the other hand, some empirical evidence supports the existence of EB models (e.g., Christophides, 1991; Pencavel, 1991; Bughin, 1995, 1996). Recently, some authors have investigated the subject of strategic choice in the negotiation agenda (Bughin, 1999; Petrakis and Vlassis, 2000; Buccella, 2011; Fanti, 2015); however, those contributions neglect the existence of a vertical quality difference between firms. This work extends the standard model allowing for product quality asymmetry between firms. Indeed, following Dixit (1979) and Hackner (2000), one can interpret demand asymmetry as a quality difference between the products supplied by the two firms. Starting from the Dixit (1979) model regarding the asymmetry that stems from vertical product differentiation, more recent literature on vertical quality differences has been introduced in models with an oligopoly structure by Hackner (2000), with asymmetric costs by Zanchettin (2006) and with unions by Correa-Lopez (2007). All of these studies, however, focus on the choice between price or quantity competition. Hackner (2000) provides an example of the relevance that vertical quality differentiation can have: in the presence of large quality differences, high-quality firms can earn higher profits under Bertrand than under Cournot competition when goods are substitutes. Thus, it is natural to ask whether (and how) a vertical product differentiation affects the established results about the choice of the bargaining agenda, a crucial element for labour-management relations and the functioning of labour market institutions in the most advanced economies. The proposed framework is a duopoly in which firms produce perfect substitutes goods which are, however, (utility-based) vertically quality differentiated. The labour market institutions consider two bargaining arrangements at a decentralized level: RTM and EB.

For simplicity, the work focuses only on two dimensions of firm heterogeneity: vertical product differentiation and a possible different bargaining agenda. Also, the introduction of horizontal differentiation would be straightforward in this frame; however, it would obfuscate the focus on the relationship between vertical quality differentiation and bargaining, which is the subject of the paper. The key results of the paper are as follows. An exogenous comparison between the two different bargaining institutions reveals that one firm can prefer EB when its quality is either sufficiently higher or lower than that of the rival, especially if unions are sufficiently strong in negotiations. Moreover, when the quality of a firm is sufficiently low with respect to that of the rival, the union active there can also prefer RTM; it follows that, in significant parametric regions, the standard conflicts of interest between parties is solved, interestingly both with RTM and EB. These results sharply contrast with those received in the extant literature and suggest that the interaction among the degree of vertical product differentiation and the distribution of bargaining power in the wage negotiation matter regarding the choice of the bargaining agenda. The remainder of the article is organized as follows. Section 2 presents the basic components of the model. Section 3 compares the equilibrium outcomes under RTM and EB and briefly discusses the welfare consequences. Section 4 provides concluding remarks.

## 2. THE MODEL

We assume a duopolistic industry in which each firm  $i$  produces differentiated goods/services, whose price and quantity are given by  $p_i$  and  $q_i$ , respectively, with  $i = \{1, 2\}$ . In addition to the duopolistic sector, a competitive sector that produces the numeraire good  $y$  exists. We also assume the existence of a continuum of identical consumers which have preferences toward  $q$  and  $y$ , represented by a separable utility function  $V(q; y)$ , linear in the numeraire good. The representative consumer maximises  $V(q; y) = U(q) + y$  with respect to quantities subject to the budget constraint  $p_1 q_1 + p_2 q_2 + y = M$ , where  $q = (q_1, q_2)$ ,  $q_1$  and  $q_2$  are non-negative, and  $M$  denotes the consumer's exogenously given income. The utility function  $U(q)$  is assumed to be continuously differentiable and satisfies the standard properties required in consumer theory (e.g., Singh and Vives, 1984, pp. 551–552). Since  $V(q; y)$  is separable and linear in  $y$ , there are no income effects on the duopolistic sector. This implies that, for a large enough level of income, the representative consumer's optimisation problem can be reduced to choose  $q_i$  to maximise  $U(q) - p_1 q_1 - p_2 q_2 + M$ . Utility maximization, therefore, yields the inverse demand functions (i.e., the price of good  $i$  as a function of quantities):  $p_i = \frac{\partial U}{\partial q_i} = P_i(q)$ , for  $q_i > 0$ ,  $i = \{1, 2\}$ . Inverting the inverse demand system above gives the direct demand functions (i.e., the quantity of good  $i$  as a function of prices):  $q_i = Q_i(p)$ , where  $p = (p_1, p_2)$  and  $p_1$  and  $p_2$  are non-negative. To have explicit demand functions for the goods/services of variety 1 and 2, it is assumed that the representative consumer's utility is a quadratic function of two differentiated products,  $q_1$  and  $q_2$ , and a linear function of a numeraire good,  $y$  (Dixit, 1979; Singh and Vives, 1984; Häckner, 2000). The main feature of those assumptions is the generation of a system of linear demand functions.

Therefore, the preferences of the representative consumer over  $q$  are:

$$U(q_i, q_j) = a_i q_i + a_j q_j - \frac{1}{2} (\beta_i q_i^2 + \beta_j q_j^2 + 2d q_i q_j), \quad (1)$$

Where, if  $a_i \neq a_j$ , then a demand asymmetry between firms exists. Such asymmetry can be interpreted as a quality difference between the products supplied by the two firms, as argued early by Dixit (1979),<sup>1</sup> followed by Häckner (2000).<sup>2</sup> This demand asymmetry implies a vertical (quality) differentiation between the two products. Moreover  $-1 < d < 1$  represents the degree of horizontal product differentiation. However, because we are only interested in analysing the role played by the vertical quality differentiation, we normalise the coefficients of the squared terms in the utility function (i.e., the “own quantity slopes” of the inverse demand functions) to unity, that is  $\beta_i = \beta_j = 1$  and assume a homogeneous products (i.e. the parameter  $d = 1$ ). Therefore, the representative consumer’s utility maximisation of Eq. (1) subject to the budget constraint  $p_1 q_1 + p_2 q_2 + y = M$  generates the following inverse demand functions of products of variety 1 and 2 (as a function of quantities):

$$p_1(q_1, q_2) = a_1 - q_1 - q_2, \quad (2)$$

$$p_2(q_1, q_2) = a_2 - q_2 - q_1. \quad (3)$$

Firm  $i$  produces output of variety  $i$  through a production function with constant (marginal) returns to labour:  $q_i = L_i$ , where  $L_i$  represents the labour force employed by the  $i$ th firm. The firm  $i$ ’s cost function is:

$$C_i(q_i) = w_i L_i = w_i q_i. \quad (4)$$

where  $w \geq 0$  is the wage cost for every unit of output produced.

Profits of firm  $i$  can be written as follows:

$$\Pi_i(q_i, q_j) = p_i(q_i, q_j) q_i - w q_i = [p_i(q_i, q_j) - w] q_i. \quad (5)$$

The labour market is unionized, and negotiations take place at the decentralized level. Each firm-specific union has as objective regarding the maximization of the wage bill:

$$V_i = w_i l_i, \quad i = 1, 2. \quad (6)$$

which is a peculiar case of a general Stone-Geary utility function (see Pencavel 1984, 1985; Dowrick and Spencer, 1994). Unions are identical; recalling that  $q_i = l_i$ , (6) becomes  $V_i = w_i q_i$

### 3. COMPARISON OF RTM AND EB NEGOTIATIONS WITH VERTICAL PRODUCT DIFFERENTIATION

This section preliminarily compares the equilibrium outcomes under Cournot competition of the two labour market bargaining institutions in this economy: RTM and EB. Quality differences in a vertical sense (e.g., due to exogenous investments on quality) are captured in

<sup>1</sup> “...an absolute advantage in demand enjoyed by one of the firms will be reflected in a higher  $a$  for it” (Dixit, 1979, 26).

<sup>2</sup> “... $a_i$  measures quality in a vertical sense. Other things equal, an increase in  $i$  increases the marginal utility of consuming good  $i$ ” Häckner (2000, 234).

(2) and (3) whenever  $a_i \neq a_j$ . As in Dixit (1979) and Hackner (2000), both quality parameters are assumed exogenous and constant.

If the degree of vertical product differentiation is defined as the ratio  $a_i/a_j$ , then one can fix (for simplicity, and without loss of generality) the quality level of firm  $j$  equal to one ( $a_j = 1$ ). This means that, for  $a_i > 1$ , firm  $i$  has an absolute advantage in demand, while if  $a_i < 1$ , firm  $j$  has an absolute advantage in demand;  $a_i = 1$  implies no quality difference between goods. To guarantee always the non-negativity of output, it is assumed all through the paper that  $\frac{1}{2} \leq a_i \leq 2$ .

### 3.1. RTM negotiations, equilibrium outcomes

This section builds a firm-union two-stage game based on the RTM model of negotiations. In the first stage, each firm-union bargaining unit simultaneously negotiates over wages; in the second stage, given the wages bargained with their unions, each firm simultaneously chooses output level. The equilibrium concept is the subgame-perfect Nash equilibrium, which is solved in the usual backward fashion. In the second stage, the product market game, firms compete on output. The FOCs of (5) lead to the firms' reaction functions

$$q_i(q_j) = \frac{1}{2}(a_i - w_i - q_j); \quad q_j(q_i) = \frac{1}{2}(1 - w_j - q_i), \quad (7)$$

with  $\frac{\partial q_i}{\partial a_i} > 0$ : an increase in the absolute advantage (disadvantage) of firm  $i$  with respect to firm  $j$  shifts its output reaction function outward (inward), leading to larger (lower) production. From (7), we obtain the firms' output for given  $w_i, w_j$

$$q_i(w_i, w_j) = \frac{1}{3}(2a_i - 1 - 2w_i + w_j); \quad q_j(w_i, w_j) = \frac{1}{3}(2 - a_i + w_i - 2w_j). \quad (8)$$

In the first stage of the game, under RTM, each firm-union bargaining unit selects its wage to maximize the following generalized Nash product

$$\underbrace{\max}_{w.r.t. w_i} N_i = (V_i)^b (\Pi_i)^{1-b} = (w_i q_i)^b [(a_i - q_i - q_j - w_i) q_i]^{1-b} \quad (9)$$

$$\underbrace{\max}_{w.r.t. w_j} N_j = (V_j)^b (\Pi_j)^{1-b} = (w_j q_j)^b [(1 - q_i - q_j - w_i) q_j]^{1-b}$$

where  $b$  is the bargaining power of the union. Using (8), the maximisation of (9) with respect to the respective wages yields the sub-game perfect best-reply functions of each union–firm pair:

$$w_i(w_j) = \frac{b}{4}(2a_i - 1 + w_j); \quad w_j(w_i) = \frac{b}{4}(2 - a_i + w_i) \quad i, j = 1, 2; \quad i \neq j \quad (10)$$

with  $\frac{\partial w_i}{\partial a_i} > 0$  and  $\frac{\partial w_j}{\partial a_i} < 0$ . The economic intuition behind these comparative statics is immediate: the larger the absolute advantage (disadvantage) of firm  $i$ , the higher (lower) the price consumers are willing to pay for that product; firm's  $i$  rents tend to increase (decrease), and thus the union can capture a larger (lower) share of them. The opposite line of reasoning holds for the rival firm  $j$ .

	Union utility	Profits
Duopoly		
RTM-RTM	$V_i^{RTM/RTM} = \frac{2b(2-b)[4(2a_i-1)-b(2-a_i)]^2}{3(16-b^2)^2};$ $V_j^{RTM/RTM} = \frac{2b(2-b)[4(2-a_i)+b(2a_i-1)]^2}{3(4-b)^2}$	$\Pi_i^{RTM/RTM} = (q_i^{RTM/RTM})^2 = \frac{4(2-b)^2[4(2a_i-1)-b(2-a_i)]^2}{9(16-b^2)^2};$ $\Pi_j^{RTM/RTM} = (q_j^{RTM/RTM})^2 = \frac{4(2-b)^2[4(2-a_i)+b(2a_i-1)]^2}{9(16-b^2)^2}$
EB-EB	$V_i^{EB/EB} = b(q_i^{EB/EB})^2 = \frac{b(2a_i-1)^2}{9};$ $V_j^{EB/EB} = b(q_j^{EB/EB})^2 = \frac{b(2-a_i)^2}{9}$	$\Pi_i^{EB/EB} = (1-b)(q_i^{EB/EB})^2 = \frac{(1-b)(2a_i-1)^2}{9};$ $\Pi_j^{EB/EB} = (1-b)(q_j^{EB/EB})^2 = \frac{(1-b)(2-a_i)^2}{9}$

Table 1: Equilibrium duopoly outcomes. For mixed duopoly, the first lower script denotes the agenda selected, the second indicates the competing firm's agenda (authors' own calculations)

Solving the system of equations in (10), one gets the sub-game perfect equilibrium wages:

$$w_i^{RTM/RTM} = \frac{b[4(2a_i-1)-b(2-a_i)]}{16-b^2}; \quad w_j^{RTM/RTM} = \frac{b[4(2-a_i)+b(2a_i-1)]}{16-b^2}. \quad (11)$$

where the apex (here, RTM/RTM) denotes the bargaining arrangement firms  $i$  and  $j$  have chosen, respectively.

Substitution of (11) into (8) and then into (5) and (6) determines, after the usual algebra, the equilibrium values of profits and union's utility reported in Table 1.

### 3.2. EB negotiations, equilibrium outcomes

Under EB, the union and the firm negotiate wages and employment at the same time.<sup>3</sup> Given the assumption of unions having symmetric power across units bargaining units, the next generalised Nash products are maximized

<sup>3</sup> Manning (1987a,b) introduces the sequential EB in which unions and firms sequentially negotiate first wages and then employment levels.

$$\underbrace{\max}_{w.r.t. w_i, q_i} N_i = (V_i)^b (\Pi_i)^{1-b} = (w_i q_i)^b [(a_i - q_i - q_j - w_i) q_i]^{1-b} \quad (12)$$

$$\underbrace{\max}_{w.r.t. w_j, q_j} N_j = (V_j)^b (\Pi_j)^{1-b} = (w_j q_j)^b [(1 - q_i - q_j - w_j) q_j]^{1-b}$$

From the system of first-order conditions of the EB game between firms and unions, the firms' reaction functions in output as well as the unions' wages functions are

$$q_i(q_j, w_i) = \frac{1}{2-b} (a_i - w_i - q_j), \quad (\text{contract curve firm } i) \quad (13)$$

$$q_j(q_i, w_j) = \frac{1}{2-b} (1 - w_j - q_i), \quad (\text{contract curve firm } j)$$

with  $\frac{\partial q_i}{\partial a_i} > 0$ , and

$$w_i(q_i, q_j) = b(a_i - q_i - q_j), \quad (\text{rent-sharing curve } i) \quad (14)$$

$$w_j(q_i, q_j) = b(1 - q_i - q_j), \quad (\text{rent-sharing curve firm } j)$$

From (13) the firms' output level, for given wages  $w_i$  and  $w_j$ , are

$$q_i(w_i, w_j) = \frac{[(2-b)(a_i - w_i) - 1 + w_j]}{(3-b)(1-b)}, \quad q_j(w_i, w_j) = \frac{[(2-b)(1 - w_j) - a_i + w_i]}{(3-b)(1-b)} \quad (15)$$

Making use of (15), one gets

$$w_i(w_j) = \frac{b[(2-b)a_i - 1 + w_j]}{3-2b}, \quad w_j(w_i) = \frac{b(2-b-a_i + w_i)}{3-2b} \quad (16)$$

with  $\frac{\partial w_i}{\partial a_i} > 0$  and  $\frac{\partial w_j}{\partial a_i} < 0$ , which defines the sub-game perfect best-reply functions in wages of the two bargaining units. Solving the system in (16), the subgame-perfect equilibrium wages are

$$w_i^{EB/EB} = \frac{b(2a_i - 1)}{3}; \quad w_j^{EB/EB} = \frac{b(2 - a_i)}{3}. \quad (17)$$

with  $\frac{\partial w_i}{\partial a_i} > 0$  and  $\frac{\partial w_j}{\partial a_i} < 0$  with an identical economic intuition as in the previous subsection.

Further substitution of (17) into (16) and then into (5) and (6) leads to the equilibrium values of profits and union's utility reported in Table 1.

### 3.3. Outcome comparison

To begin the comparison of the two bargaining institutions, let us present the following Lemma.

**Lemma 1.**  $q_i^{RTM} \geq q_i^{EB}$  if  $b \leq \frac{4(5a_i - 4)}{4a_i - 5}$ ,  $w_i^{RTM} \geq w_i^{EB}$  if  $b \geq \frac{3(a_i - 2) + \sqrt{73a_i^2 - 100a_i + 52}}{2(2a_i - 1)}$ ;

$q_j^{RTM} \geq q_j^{EB}$  if  $b \leq \frac{4(4a_i - 5)}{5a_i - 4}$ ;  $w_j^{RTM} \geq w_j^{EB}$  if  $b \geq \frac{3 - 2a_i + \sqrt{52a_i^2 - 100a_i + 73}}{2 - a_i}$ .

*Proof:* The proof follows from simple comparison.

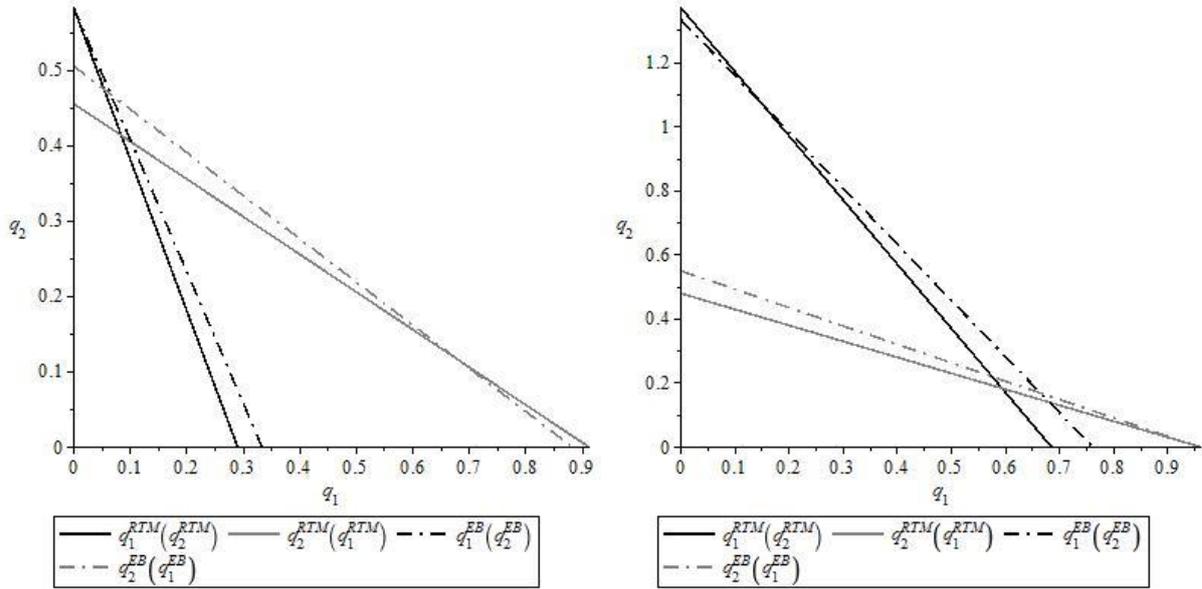


Figure 1: Firms' reaction functions under RTM (solid lines) and EB (dash-dotted lines), at the respective optimal  $w_i^*, w_j^*$  and  $b = .25$ . Left box:  $a_i = .6$  (firm  $i$  absolute disadvantage); right box  $a_i = 1.5$  (firm  $i$  absolute advantage) (authors' own calculations)

Lemma 1 reveals that the standard result that the presence of vertical product differentiation can partially overturn the standard result that EB negotiations lead to higher employment levels. The rationale for this result can be better explained with the help of Figure 1, which depicts the reaction functions of the two firms, under RTM and EB, at the equilibrium wages for a given value of the union bargaining power and two different levels of the product quality parameter. First, in the RTM model, each firm's choice concerning the reaction to the rival's move is (directly) unaffected by the union's bargaining strength, as eq. (7) shows. However, in the EB model, employment enters the negotiation agenda, and therefore unions influence the firm's reaction to the rival's output decision: eq. (13) reveals that this translates into a rotation of each firm's reaction function which becomes flatter, i.e., more sensitive to output changes. Second, in both models, the quality differentiation has a direct impact on firm  $i$ 's reaction function,

which shifts inward (outward) in the case of absolute dis(advantage). Therefore, the equilibrium point at the quantity stage of the game is determined by the interactions of those two forces and their relative intensities at precise parametric values. In Figure 1, the left box seems to suggest that, when the firm produces low-quality goods, sensitivity is crucial for leading the firm to produce more output under RTM, while the right box reveals that, with high quality goods, employment sensitivity plays a reinforcing role in determining a higher EB output. It follows that, depending on the equilibrium output, the final prices of the goods are affected and thus also are the oligopoly rents over which unions negotiate their respective wages. To derive the key properties of the two bargaining agendas in this framework, making use of the values in Table 1, one can build the profits and union's utility differentials for the two firms:

$$\Delta\Pi_i = \Pi_i^{EB/EB} - \Pi_i^{RTM/RTM} < 0; \Delta\Pi_j = \Pi_j^{EB/EB} - \Pi_j^{RTM/RTM} < 0 \quad \forall a_i \in \left[\frac{1}{2}, 2\right] \wedge b \in [0, 1]$$

$$\Delta V_i = V_i^{EB/EB} - V_i^{RTM/RTM} \begin{matrix} \leq 0 \\ > 0 \end{matrix} \quad \text{if } b \begin{matrix} > \\ < \end{matrix} b^1(a_i)$$

$$\Delta V_j = V_j^{EB/EB} - V_j^{RTM/RTM} \begin{matrix} \leq 0 \\ > 0 \end{matrix} \quad \text{if } b \begin{matrix} > \\ < \end{matrix} b^2(a_i)$$

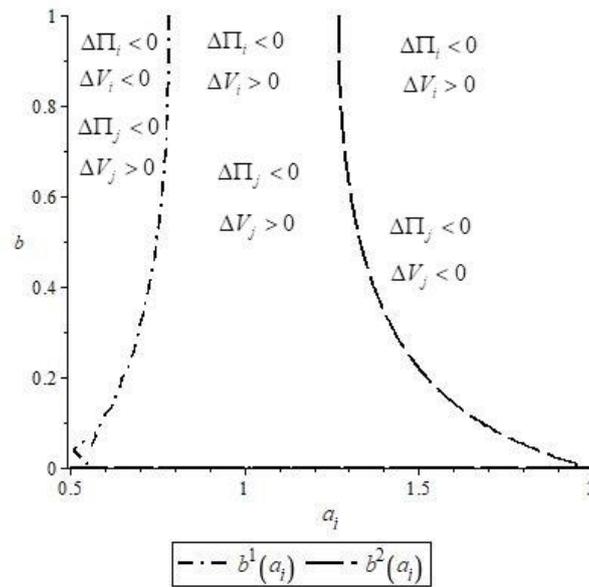


Figure 2: Behaviour of the profits and union utility differentials in the  $(a_i, b)$ –plane (authors' own calculations)

The analysis of those differentials leads to the next proposition.

**Proposition 1:** In the feasible parametric space: a) Firms always prefers RTM negotiations, regardless of the vertical quality differentiation; b) Only one union at a time prefers RTM, the one active in the absolute disadvantaged firm, i.e., union  $i$  if  $b \geq b^1(a_i)$  and union  $j$  if  $b \geq b^2(a_i)$ . In other words, vertical product differentiation partially solves the conflicts of interest among the parties about the bargaining agenda.

Figure 2 graphically depicts the finding in Proposition 1. Despite quality differentiation, the standard result of firms preferring RTM negotiations emerge.

This stems from the fact that, within this institutional arrangement, employers have the opportunity to adjust employment levels on their labor demands once wages are negotiated. However, the union in the quality disadvantaged firm prefers RTM negotiations as well, in contrast to the common tenet that unions generally want to negotiate under EB. The rationale for this result derives from the above analysis: under RTM negotiations, the disadvantaged firm induces a soft reaction of the rival that allows the prices of the goods of that firm to be relatively high, allowing the union to capture a larger share of the rents and thus to negotiate relatively higher wages. Therefore, the presence of firms producing quality differentiated goods, a product market characteristic, can help soften the conflict of interest on union-firm negotiations, a labor market institutions. This reveals once more the strict connection between the two markets and that further investigation is required to understand those relations in depth.

#### 4. CONCLUSION

This paper has shown that, in a Cournot duopoly market with vertically differentiated products, the traditional conflict of interest between firms and unions on the bargaining agenda can be partially solved. In fact, the low-quality firm and its union can agree on the right-to-manage model. While this note has made an exogenous comparison, the next steps in this research are to investigate the endogenous equilibria of the game in which the bargaining units can strategically choose the negotiation agenda and the social welfare impact.

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# PERCEPTION OF THE SELF-SERVICE QUALITY IN THE AIRLINE INDUSTRY – A LITERATURE REVIEW

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## **ABSTRACT**

*The industry has faced a dramatic growth of technology-based service delivery solutions over the past ten years. Transactions aided by technology are increasingly defining the fast-paced world of today. Hence, global airports seek to provide smarter and innovative solutions that enhance customer satisfaction. Over time, many theories have progressed in the definition of quality and development of quality management (Martin, et. al., 2020). Since the early 1980s, studies on service quality positioned service-oriented dimensions of quality (Parasuraman, et al., 1985). Currently, the most accepted and agreed theory of quality is that which gives attention to customers defining quality and that service which not only meets but exceeds customer's needs and expectations (Martin, 2020). This research aims to review the existing research literature and synthesize the main approaches and findings related to the demographic, situational, and quality service dimensions influencing consumers' perceived service quality in using self-service technology.*

**Keywords:** *Aviation, self-service technology, SERVQUAL mode, service quality*

## **1. INTRODUCTION**

This chapter of the research explores the different essential concepts and dimensions of service quality, particularly focused on the demographic, situational, and quality service dimensions, which potentially influence the quality of self-service technologies. In general, different antecedents or dimensions are linked with the perception of the quality of services, which is represented by Parasuraman, Zeithaml, and Berry's (1985) SERVQUAL model. It provides a basic skeleton that can be adapted or supplemented to fit certain characteristics or research needs of a service or organization (Crompton, Mackay & Fesenmaier, 1991). There is still a lack of a comprehensive literature review that reviews how each component in this model is linked with service quality. Therefore, the paper's main aim is to identify the demographic, situational, and quality service dimensions influencing consumers' perceived service quality using self-service technology. Through reviewing existing research and synthesizing the main approaches and findings to explore the relationships surrounding the different dimensions of perceived service quality towards self-service technologies in the airline industry. Correlational research helps the researcher study relationships between certain factors or variables, and detect trends and patterns in the data (Williams, 2011). The main sections in this research paper are as follows; in the methodology, a brief explanation of the research methods will be provided. Then following these sections; perceived service quality, SERVQUAL model of service quality, SERVQUAL in the aviation sector. The paper concluded with a summary of the main findings and based on the limitations of this study a recommendation for future research has been advised.

## **2. METHODOLOGY**

This research study intends to explore the relationships surrounding the different dimensions of perceived service quality towards self-service technologies in the airline industry. Based on the subject and objectives of the study suitable research methods were implemented. The description will describe observed phenomena of perceived service quality towards self-service techniques that have been implemented in airports.

Following with analysis and illumination of all the critical elements related to these important areas especially the ones related to perceived service quality, SERVQUAL model of service quality, SERVQUAL in the aviation sector. The synthesis method will be implemented that will lead to combining the investigated and systematized data regarding the main aspects of the study. For the conclusions and findings, an inductive and deductive methodology will be adopted.

### 3. PERCEIVED SERVICE QUALITY

Scholars and experts in the academic spectrum contributed much to an understanding of service quality, but conceptual work remained divergent despite more than two decades of study and debates (Prakash & Mohanty, 2012). Defining the word quality could be difficult, mainly because it is continually evolving; some quality philosophers identified some concepts linked to it, such as continuous improvement and learning, which apply to individual and organizational levels. Most of them approved that quality means meeting and exceeding the customers' expectations by acknowledging that customers are the ones who define quality. There are different dimensions of quality, and below Table 1 shows the findings of several research on this area:

Authors and years	Service quality definition	Service quality dimensions
Ekinci (2001)	Generally, service quality is seen as the output of the service delivery system, particularly in pure service systems. Additionally, service quality is correlated with customer satisfaction. Customer perceptions of service quality are subjective.	(1) Physical quality; (2) Output quality; (3) Time quality; (4) Reliability.
Kang and James (2004)	Service quality is a broad term that refers to a customer's assessment of service expectations in relation to a business's performance. A firm with a high standard of service quality is more than likely capable of addressing consumer expectations while being economically competitive in its sector.	(1) Functional quality; (2) Technical quality.
Saghier (2015)	Service quality is a worldwide judgment or attitude on the service's overall excellence or superiority", and they envisaged a customer's assessment of the service's overall quality.	SERVQUAL 5 dimensions
Kasiri et al. (2017)	Service quality is a metric that indicates how well a service meets consumer expectations. Businesses that consistently meet or exceed customer expectations are deemed to provide superior service.	(1) Functional quality; (2) Technical quality.
Nguyen and Tran (2018)	Service quality is defined as the attitude of consumers formed over time as a result of a service performance.	(1) System quality; (2) Technical quality; (3) Information quality.
Pakurar et al. (2019)	Quality of service can be understood as a comprehensive customer evaluation of a particular service and the extent to which it meets their expectations and provides satisfaction	SERVQUAL 5 dimensions; (6) Access to Service; (7) Financial aspect; (8) Employee Competences.
Widiastuti et al. (2019)	The quality of service is a result of the effort that each employee of the business makes to please clients. In the common sense, service quality is described as the customer's perception of superiority or perfection.	(1) System Quality; (2) Information Quality; (3) Service Quality.

*Table 1: Research about service quality and service quality dimensions  
 (Source: Huy & Thuy Dam, 2022)*

Nevertheless, perceived service quality has been a widely studied construct (Ladhari & Morales, 2008).

To further understand what constitutes perceived service quality, it is essential to take note of Zeithaml (1988) and Parasuraman et al. (1985, 1988). Firstly, Zeithaml (1988) defined perceived service quality as the overall assessment of the entire excellence of the services provided to a customer. As the recipient of these services, this service quality is notably perceived by the customer. It is also relevant to take note that the customer's perceived value and quality towards a provided service are different constructs (Ladhari & Morales, 2008). Zeithaml (1988) argued that perceived value has a trade-off and acquires certain components, compared with quality. It is also more personal and individualistic. On the other hand, Kowsalya and Dharanipriya (2019) defined service quality as an assessment of how well a certain service conforms to the expectations of the customer. This is one justification why most businesses assess the quality of services they provided to the customer and use such evaluation or feedback data to improve their services—as they are able to identify the problems or issues with their services, after assessing their clients' satisfaction levels. The said definition is noted as the simplified version of how experts and scholars defined service quality, such as Bitner and Hubbert (1994), wherein service quality pertains to the customer's impression of the relative superiority or inferiority of the services provided by the service provider and even the service provider itself. Moreover, service quality is concerned with the delivery and performance of the service (Crompton, Mackay & Fesenmaier, 1991).

#### 4. SERVQUAL MODEL OF SERVICE QUALITY

Over the years, service quality has been attached to certain criteria and dimensions to measure service. Parasuraman et al. (1985) famously conceptualized service quality, which initially consisted of 10 determinants (as shown in below Table 2), until it was layered down to five dimensions—tangibility, reliability, responsiveness, assurance, and empathy—now generally composes the SERVQUAL model. Parasuraman et al. (1985) also presented the model as multi-item scale that can be used to evaluate service quality and customers are required to answer about their expectations and perceptions about the services provided by a certain organization or company (Prakash & Mohanty, 2012).

<b>Determinants</b>	<b>Description</b>
Tangibles	Facilities available to offer the service (tools & equipment's
Reliability	Uniformity of performance and dependability
Security	Risk-free, freedom from danger
Competence	Having proficiency required to do the service
Access	Ease of communication and approachability
Credibility	Trustworthiness, honesty
Responsiveness	The willingness of employees to deliver service
Communication	Listening and using understandable language among customers
Courtesy	Being polite, respect and friendliness with employees
Understanding the customers	Knowing the needs, learning specific requirements, providing individualized attention.

*Table 2: Ten Determinants of Service Quality  
 (Source: Parasuraman, Zeithaml & Berry, 1988)*

SERVQUAL provides a basic skeleton that can be adapted or supplemented to fit certain characteristics or research needs of a service or organization (Crompton, Mackay & Fesenmaier, 1991). It can also be applied or used in a broad services spectrum, although Parasuraman et al. (1985) initially focused on four commercial services where the SERVQUAL model can be used: retail banking, credit cards, securities brokerage, and product repair and maintenance (Crompton, Mackay & Fesenmaier, 1991; Yarimoglu, 2014). The five dimensions of Parasuraman et al.'s (1985) SERVQUAL model, which are also used in this study, have distinct descriptions that service providers carefully look through. The (a) tangibles are the physical facilities like equipment and tools and the employees of the service provider, which are visible to the customers; (b) reliability is the service provider's ability to accurately perform and fulfill what it promised, which customers can rely on; (c) responsiveness refers to the willingness to help customers and users, which depicts the service provider's prompt attention; (d) assurance reflects the employees' knowledge and courteousness, which translates to confidence and trust; and (e) empathy comprises individualized attention and cares towards customers or users (Crompton, Mackay & Fesenmaier, 1991). In addition, it was learned from Yarimoglu (2014) that Parasuraman et al. (1988) presented 22 items in each component of the SERVQUAL model and they were presented on a seven-point Likert scale. These items are seen in Table 3 below and were used initially by the four industries mentioned earlier.

Dimensions	Items
Tangibles: physical facilities, equipment, and appearance of personnel	1. should have up-to-date equipment 2. physical facilities should be visually appealing 3. employees should be well dressed and appear neat 4. appearance of physical facilities should be in keeping with the type of services
Reliability: to perform the promised service dependably and accurately	5. should do things by the time they promise 6. when customers have problems, they should be sympathetic and reassuring 7. should be dependable 8. should provide their services at the time they promise 9. should keep accurate records
Responsiveness: to help customers and provide prompt service	10. should not be expected to tell customers when services will be performed* 11. not realistic for customers to expect prompt service* 12. employees do not always have to be willing to help customers* 13. is OK if they are too busy to respond to requests promptly*
Assurance: courtesy knowledge, ability of employees to inspire trust and confidence	14. customers should be able to trust employees 15. customers should feel safe in their transactions with these stores' employees 16. the employees should be polite 17. employees should get adequate support to do their jobs well
Empathy: caring, individualized attention the firm provides its customers	18. company should not be expected to give customers individual attention* 19. employees cannot be expected to give customers personal attention* 20. unrealistic to expect employees to know what the needs of their customers are* 21. unrealistic for them to have customers' best interests at heart* 22. should not be expected to have operating hours convenient to all customers*

Table 3: SERVQUAL dimensions and each of its items as per Parasuraman et al. (1988)  
 (Source: Yarimoglu 2014, p.85)

Parasuraman et al.'s (1988) SERVQUAL model is considered advantageous, as it has been the standard measure for service quality. It clearly offers different ways to determine the quality of services being presented by a service provider while guiding customers about the kind of services being measured. True to how it is described, the SERVQUAL model indeed serves as an important backbone of service quality and an essential guiding point for both service providers and the users or recipients of these services.

## **5. SERVQUAL IN AVIATION SERVICES**

With the prominence and popularity of the SERVQUAL model for service quality measures, several studies were found to have utilized the model to assess the services of the aviation sector. One is from Oli (2018) who used the model to evaluate the services provided by the Norwegian Airline in Norway to 158 Asian consumers, who usually are considered frequent flyers. The results highlighted that the SERVQUAL model was a better instrument for measuring the airline company's quality of services. Other main findings were (a) customer expectations are significantly different from customer perceptions; (b) the five dimensions of service quality affect the perceived service quality; (c) customer satisfaction is affected by the perceived service quality, and (d) tangibility and assurance were the only service quality dimensions that had a significant impact on customer satisfaction. Meanwhile, a more recent study that focused on the Garuda Airline of Yogyakarta International Airport during the COVID-19 pandemic was found to utilize the SERVQUAL model. Susilo et al. (2022) deployed 200 questionnaires but only received 142. Based on multiple regression analysis, the results stated that partially tangible and reliability dimensions had a positive and significant influence on customer satisfaction, while responsiveness and assurance had an insignificant relationship. As for Nwaogbe et al. (2021), the SERVQUAL model revealed that the perceived service operations of Nigerian airports during domestic travel were less than the passengers' expectations. Therefore, they were expecting better services. The said findings were analyzed to be influenced by the economic recession, which resulted to lower patronage and lower service standards, flight cancellations, increased missed trips, passenger complaints, and even faltering customer loyalty. Another study is from Ganiyu (2016) with a focus on the domestic airline carriers in Nigeria. A cross-sectional survey was conducted to sample 800 passengers departing Lagos State. The findings highlighted that the modified SERVQUAL model offered a satisfactory level of overall reliability towards the region's airline industry. All the service quality dimensions were positively and significantly interrelated. More so, Ganiyu (2016) found poor service quality perception of the airline carriers in the region—wherein customers were mostly dissatisfied in terms of flight pattern, assurance, reliability, facilities, responsiveness, employee, and customization. Based on these findings, the SERVQUAL model can indeed aid in determining the quality levels of services and justify what service areas should be improved.

## **6. CONCLUSION**

Through the reputation of the SERVQUAL model for service quality measure, several studies were found to have utilized the model to assess the services of the aviation sector. The main critical finding from this literature analysis highlighted that the SERVQUAL model was a better instrument for measuring the airline company's quality of services. Hence, further research will aim to explain customers' perceptions and satisfaction levels towards the self-service technologies offered by Fujairah International Airport. The conceptual framework will be used to conduct this research is the SERVQUAL model developed by Parasuraman, Zeithaml, and Berry in 1985. As suggested in the correlational study format, the analysis will help determine the levels of relationships in these variables or factors, either positive or negative, to determine if the service is perceived to be of quality or not. The findings are also analyzed with relevant research as justification and to support conclusions and further studies.

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# REGIONAL CHALLENGES IN SOCIAL WELFARE OF FAMILIES WITH CHILDREN IN FINLAND: STATISTICAL ANALYSIS OF REGIONAL BACKGROUND FACTORS IN THE DEMAND FOR CHILD PROTECTION

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## ABSTRACT

*This study focuses on the social welfare and social security of families with children and related risk factors at the regional level in Finland. According to previous research, material deprivation is a key factor, which is associated with social problems of families and the need for child protection. In addition, economic insecurity of families, various social risk factors, and morbidity are closely linked. The present study analyses the factors that are related to the demand for child protection at the municipal level. The research is based on Finnish municipality-specific statistical data, and the analysis was performed using linear regression analysis. According to the results, the demand for child protection is affected by the proportion of poverty, morbidity, and single-parent families at the municipal level. In addition, the analysis reveals the interaction effect of family structure and morbidity on child welfare notifications. Based on the study, some conclusions regarding welfare politics can be drawn. From the perspective of the demand for child protection, one key challenge is regional social deprivation. In turn, the dependence between poverty and the need for child protection seems complicated, which means that the problems of the social welfare of families with children cannot be solved with the help of financial support alone; hence, versatile social support for families and communities is needed. Furthermore, the study emphasises the perspective of public health in the prevention of social problems in families with children.*

**Keywords:** *child protection, poverty, social welfare, regional development, welfare politics, Finland*

## 1. INTRODUCTION

Child protection is often approached as an individual- or family-level issue. The need for child protection can be attributed to parents' substance abuse and mental health problems, difficulties in life management or, for example, the child's neuropsychological symptoms. These issues can manifest themselves in various problems with family dynamics, child maltreatment or lack of care, or a child's antisocial or suicidal behavior. From this perspective the solution to the problems is sought, primarily by supporting the child and the family. However, child protection can also be seen as a system-level issue, which is related to regional and societal challenges. At this level, child protection problems are also closely related to social policy, public health, policies of the welfare economy, and issues of regional development. For example, Lotspeich et al. (2020) have shown that at the neighborhood level, the incidence of children placed into out-of-home care is highest in regions with low socio-economic status (e.g. high unemployment and poverty rate), a high number of single-parent families, and fewer residents with health insurance. As a conclusion, those authors argue that understanding neighborhood-level risk factors is the first step, to create and provide preventive services, which in turn may reduce the need for child protection.

In this article, we analyse the factors that are related to the demand for child protection at the municipal level, in particular, we examine the effect of proportion of poverty, morbidity, and single-parent families. With regards to the demand for child protection, the study is focused on the proportions of child welfare notifications and child removals. Both of these reflect, not only the need for child protection, but also the functioning of the social welfare system. In addition, the number of notifications, of course, also indicates which issues are considered to be of concern in the child's immediate social environment. Our research is based on Finnish municipality-specific statistical data.

## **2. CONCEPTS**

### **2.1. Poverty**

Scholars have approached the association of household economic insecurity and the need for child protection from different perspectives. Material deprivation is a key factor which is associated with the need for child protection. For instance, Yang (2015) found evidence that material hardship, such as housing and food, are associated with child neglect, while physical abuse is not responsive to any particular types of hardship. Based on their literature review, Walsh et al. (2019) argue that extensive research supports the notion, that a lower childhood socioeconomic position is associated with a greater risk of maltreatment and, thus, the need for child protection. Further, community-level poverty is also found to be associated with the need for child protection (Lotspeich et al., 2020). According to the results of the study by Eckenrode et al. (2014), the county level income inequality and child poverty rate were positively and significantly correlated with child maltreatment rates. Higher income inequality across US counties was significantly associated with higher county-level rates of child maltreatment. Further, Lewer et al. (2020) also show that local areas with high rates of child poverty also have a high frequency of adverse childhood experiences.

### **2.2. Morbidity**

At the public health level, a strong link has been found between health and socio-economic factors (Hunter & Flores, 2021). In the household, socio-economic factors such as poverty, income inequality, and unemployment may directly affect child and family health outcomes, through substandard living conditions and reduced access to education or medical services. In this sense, morbidity is intertwined with social risk factors as poverty. It is a well-known fact that broader societal structures contribute to child-level outcomes through community health, but the mechanisms by which the health and structure of a child's community can impact wellbeing are complex (Fresithler & Maguire-Jack, 2015). It is not clear whether morbidity is directly associated with the need for child protection services, or whether its effect is combined with other social determinants, and affects the need for child protection indirectly. According to Nevrianan (2022), out-of-home placements are more likely among children whose parents have mental health problems. Further, children with long-term illnesses are in a risk situation for child maltreatment. On the other hand, health care spending can tackle health inequality and, in turn, reduce the need for child protection. Individually, poor people have to spend a much greater proportion of their income on health care than wealthier people. Systemically, medical spending can crowd out other government spending on social services, drawing resources away from education and environmental improvement, for example.

### **2.3. Single-parent families**

Studies have shown that single parenthood increases the probability of the need for child protection interventions. For instance, Harrikari (2014) found the connection in his municipality level analysis. The households of single mothers are at risk of the need for child protection interventions.

Family size and parental unemployment increase the risk of child protection interventions in single-parent families (Bradt *et al.*, 2014.) According to the literature, the presence and support of a second parent, can have a positive effect on a family's resources and the children's welfare (Malette *et al.*, 2020). The risk of single parenthood may be based on the fact that single-parent households are more fragile for economic insecurity than families with two parents, but also the single-parent households may have protective factors, which are less available for the stress of everyday life, compared to the families where parents can share the worries of life. In this sense, single parenthood is also a risk of stress and emotional burden, i.e., impacting mental health. Hence, single parents may not be able to provide sufficient material resources and educational support for their children, in order to enable them to augment their income level (McLanahan & Percheski, 2008). Single parenthood has slightly different effects on the mothers versus the fathers but, overall, it predicts the risk factors of the need for child protection interventions.

### **3. AIM AND HYPOTHESES**

The study focuses on societal background factors that explain the demand for child protection at the municipal level in Finland. In particular, the effects of the proportion of poverty, morbidity, and single-parent families are analysed at the municipality level. The study examines the demand for child protection in terms of the proportion of child welfare notifications and the proportion of child removals. Our three hypotheses (H1, H2, and H3) are:

- (H1) The proportion of poverty is associated with the demand for child protection.
- (H2) The proportion of morbidity is associated with the demand for child protection.
- (H3) The proportion of single-parent families is associated with the demand for child protection.

### **4. DATA, VARIABLES, AND METHODS**

The data were retrieved from the Sotkanet Indicator Bank, which is provided by the National Institute of Health and Welfare in Finland. The databank offers information on health and social services from all Finnish municipalities. The indicators are based on individual level information, which is aggregated into the municipality level. The data were gathered from 292 municipalities in year 2019 [Referred 15.06.2021]. The analyses are conducted with two dependent variables for measuring the demand for child protection services: the indicators for (1) child welfare notifications, and (2) child removals, which were both measured at the municipality level. In the case of child welfare notifications, the indicator gives the proportion of children from the age equivalent scores for children (under 18 years). Only some of the children, who have been the subject of child welfare notifications, end up as the clients of child protection services. In the case of child removals, the indicator gives the proportion (in %) of children aged 0-17 years, who have been placed outside the home during the year, in the total population of the same age in a municipality. The indicator includes children who have been placed outside the home as a supportive intervention via an emergency placement, thus being taken into care by consent or involuntarily. The missing data of child removals (23.6%) were focused on small municipalities because, regarding the ethical security issues, the municipality-level information of less than 5 cases was deleted by the controller of the data. There is considerable variation between municipalities in both dependent variables (Table 1). The following independent variables were used in the analysis (Table 1). Single parent families, as % of all families with children is an indicator which is measured at the municipality level. At-risk-of-poverty-rate for children is an indicator which gives the percentage of persons under 18 living in households with low incomes in the total population of persons under 18 in the geographical area. The risk-at-poverty threshold is set at 60% of each year's median equivalent disposable income of Finnish households (according to the adjusted OECD scale).

The indicator thus describes the position of the population group by means of relative income distribution. If the at-risk-of-poverty rate of persons under 18 is higher than the at-risk-of-poverty rate in the population at large, the relative position of families with children is poorer than on average. The age-standardised morbidity index describes the morbidity in a specific municipality in relation to the whole country's morbidity. It takes into account seven different groups of diseases and four different aspects of weighting to evaluate the significance of diseases. The value of the index increases as the morbidity in the region increases. The value of the index is 100 for the whole country. Municipality size is approached as a control variable. Municipalities are different according to their size, thus their child protection systems are also different. Municipality size is used as a confounding variable for controlling the effect of size.

Variable		Min	Max	Mean	St. deviation	N	Missing values %
Dependent variables	Child welfare notifications (in %)	1.03	19.23	6.99	2.26	292	0.0%
	Child removals (in %)	0.30	4.60	1.50	0.71	223	23.6%
Independent variables	Single-parent families (in %)	6.00	30.30	20.29	4.36	292	0,0%
	At-risk-of-poverty-rate (in %)	4.80	28.20	13.80	4.55	291	0.3%
	Morbidity (index=100)	60.60	190.30	110.16	19.65	292	0.0%
Control variable	Municipality size	690	653835	18812	50728	292	0.0%

Table 1: Variables

All analyses were conducted using IBM SPSS (version 27) statistical software. The Pearson Correlation Coefficient was used to explore associations between the factors. Also, linear regression analysis with the estimation method of ordinary least squares was conducted, which may be problematic for a response variable which indicates proportion. But, a review of the assumptions for regression analysis found that there is no interfering multicollinearity between the variables. The linear relationship between the response variable and the explanatory variables was examined using a residual pattern that showed no violations. The interaction terms were visualized by using the Process programme.

## 5. RESULTS

According to the correlation analysis (Table 2), the proportion of child welfare notifications and child removals correlate strongly, which is assumed because both directly describe the need for child protection. Child welfare notifications and child removals correlate significantly with each other ( $r = .556^{***}$ ). Both dependent variables correlate with single-parent families ( $r = .450^{***}/.518^{***}$ ) and morbidity ( $r = .277^{***}/.423^{***}$ ), but only child removals correlate with at-risk-of-poverty rate ( $r = .332^{***}$ ). Neither of the dependent variables showed any significant correlation with municipality size; thus, it was omitted from any further analyses.

Variable	Notifica-tions	Child removals	Single-parent families	Poverty	Morbi-dity	Munici-pality size
Child welfare notifications (in %)	1					
Child removals (in %)	.556***	1				
Single-parent families (in %)	.450***	.518***	1			
Poverty (in %)	.109	.332***	.210***	1		
Morbidity (index=100)	.277***	.423***	.067	.549***	1	
Municipality size	.099	.062	.246***	-.093	-.210***	1

Table 2: Pearson Correlation coefficient

\*\*\* = Sig. 2-tailed <.001

The results of the linear regression analyses for child removals are presented in four models in Table 3. In Model 1, single-parent families and morbidity reached statistical significance at the level of  $p < .001$ . The increase in single-parent families and morbidity predict the growth of child removals. At-risk-of-poverty was not statistically significant, in any of the interaction terms in Models 2, 3, and 4.

Independent variable	Model 1 B (SE)	Model 2 B (SE)	Model 3 B (SE)	Model 4 B (SE)
Intercept	-1.423*** (.257)	-1.492*** (.257)	-1.323*** (.264)	-1.481*** (.269)
Single-parent families	0.082*** (.009)	0.083*** (.009)	0.079*** (.009)	0.085*** (.010)
Morbidity	.012*** (.002)	.012*** (.002)	.012*** (.002)	.012*** (.002)
Poverty	-.005 (.011)	-.004 (.011)	-.003 (.011)	-.005 (.011)
Single-parent families*poverty		.053 (.042)		
Morbidity*poverty			-0.060 (.038)	
Single-parent families*morbidity				.028 (.039)
Adjusted R-squared	37.4	37.6	37.8	37.3

*Table 3: Predictors of child removals.*  
 \*\*\* = Sig <.001, \*\* = Sig <.01, \* = Sig <.05

The results of the linear regression analyses for child welfare notifications are presented in four models in Table 4. In Model 1, all predictors reached statistical significance, single-parent families and morbidity at the level of  $p < .001$ , and at-risk-of-poverty at the level of  $p < .01$ . The increase in single-parent families, morbidity, and at-risk-of-poverty predicts the growth of child welfare notifications. The interaction of single-parent families and morbidity was statistically significant ( $p < .05$ ). The interactions terms 1 and 2 were not statistically significant.

Independent variable	Model 1 B (SE)	Model 2 B (SE)	Model 3 B (SE)	Model 4 B (SE)
Intercept	-1.524 (.905)	-1.397 (.908)	-1.693 (.916)	-1.067 (.923)
Single-parent families	0.275*** (.030)	0.280*** (.030)	0.282*** (.030)	0.271*** (.029)
Morbidity	.042*** (.008)	.040*** (.008)	.041*** (.008)	.039*** (.008)
Poverty	-.093** (.034)	-.098** (.034)	-.096** (.034)	-.098** (.034)
Single-parent families*poverty		-0.167 (.118)		
Morbidity*poverty			0.148 (.001)	
Single-parent families*morbidity				-.246* (.111)
Adjusted R-squared	27.9	28.2	28.0	28.9

*Table 4: Predictors of child welfare notifications.*  
 \*\*\* = Sig <.001, \*\* = Sig <.01, \* = Sig <.05

The effect of the interaction term can also be visualised, which makes it clearer to observe what is happening in the data (Figure 1). The increase in the proportion of single-parent families increases child welfare notifications, but this association depends on morbidity in a municipality. The effect of single-parent families is bigger if the proportion of morbidity is high comparing to the municipalities where the proportion of morbidity is low, but the difference narrows as the proportion of single-parent families increases. Hence, the proportion of morbidity moderates the effect of single-parent families on the proportion of child welfare notifications.

*Figure following on the next page*

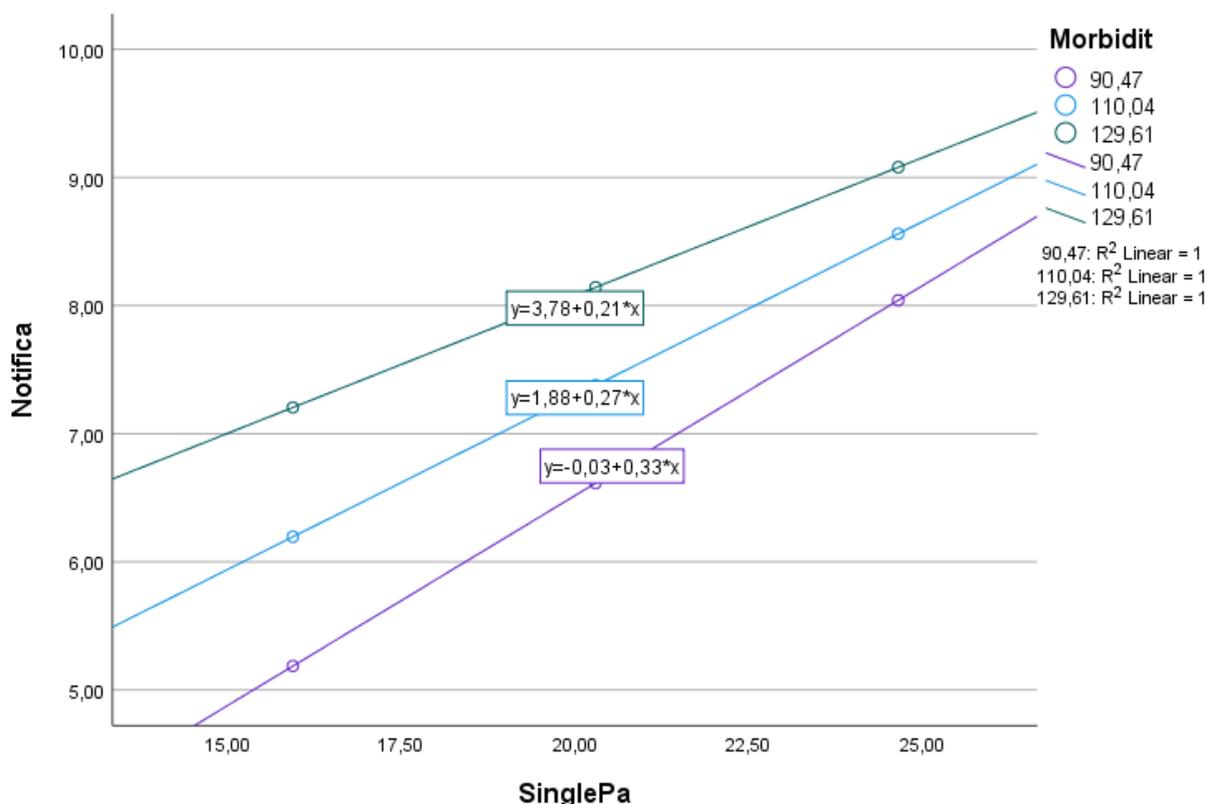


Figure 1: Effect of single-parent families on child welfare notifications as a function of morbidity (Medium = Mean, Low = -1 SD, High = +1 SD)

## 6. DISCUSSION

Three hypotheses were considered in the study. We analysed whether the proportions of poverty (H1), morbidity (H2), and single-parent families (H3) are associated with the demand for child protection. The hypotheses received partial support. The proportions of morbidity and single-parent families predict the relative share of both child removals and child welfare notifications. In contrast, the association between the risk of poverty and the demand for child protection appears to be quite complex. Based on the analysis, we highlight some issues for broader discussions. The correlation analysis shows that poverty is associated with child removals, i.e., poverty is a risk factor regarding the need for child protection. In this respect, the result is consistent with previous research (Sedlak et al., 2010). Based on their literature review, Walsh et al. (2019) argue that extensive research supports the notion that a lower socioeconomic situation in childhood is linked with a greater risk of child maltreatment. However, in the present study the relationship between poverty and child removals was no longer statistically significant in the regression model, which also takes into account other risk factors. In this sense, poverty seems to be linked to other risk factors, and thus to a predictor of the need for child protection. However, it is not in itself a particular risk for child removals. In contrast, according to the regression analysis, poverty predicts the proportion of child welfare notifications, but its effect is negative. This means that at the municipality level, poverty can paradoxically even prevent the demand for child protection services. This phenomenon may be due to the fact that the threshold for expressing concerns increases in poor areas, due to the high incidence of various social problems. In this sense, the expression of concern is linked to the social situation in the municipality. The more there are social problems in the area, the less likelihood there is that concern may be expressed. The association between socio-economic factors and health has been found in many studies.

Multiple studies document that social determinants of health (e.g., poverty, housing instability, food insecurity, low parental educational attainment) are significantly associated with child maltreatment (Hunter & Flores, 2021). Nevriana (2022) found that out-of-home placements are more likely among children whose parents have health problems. However, there has been no clear evidence of a link between morbidity and the demand for child protection. This study shows that morbidity is related to both the proportion of child welfare notifications and the proportion of child removals. This dependence is also maintained in regression models that include poverty and the proportion of single-parent families. Previous studies have found a link between the proportion of single-parent families and the demand for child protection (Harrikari, 2014; Lotspeich et al., 2020). The present study shows that the proportion of single-parent families is even a key predictor of the demand for child protection services. Its importance becomes apparent when observing both child removals and child welfare notifications. Further, in the areas where there is an abundance of single-parent families, its importance even increases in terms of child welfare notifications. At the same time, the relative importance of morbidity is declining, although it is still a significant factor. In this analysis, certain risk factors for child protection demand have been selected for consideration. The choice of risk factors to consider is never self-evident. For example, instead of risk of poverty, other socio-economic factors could have been chosen, such as the unemployment rate, or the proportion of those citizens with no secondary education. In addition, the study is limited to the interdependencies between municipal-level factors, and does not indicate which factors, at the individual level, predict the need for child protection.

## 7. CONCLUSION

Based on the results of the study, some conclusions and recommendations regarding social welfare, politics, and socially sustainable regional development can be drawn. Firstly, the study highlights the complex effects of poverty on the need for child protection. According to our results, risk of poverty is related to the demand for child protection, but it is not a key factor in that regard. Thus, it can be assumed that financial support alone is not a sufficient means of preventive child protection (cf. Pelton, 2015; McLaughlin, 2017). Instead of aiming at poverty prevention, perhaps we should strive to prevent social deprivation. This would require a variety of means, combining financial support with many other support services for families. In particular, we need to pay attention to the different support services for single-parent families. In this case, the emphasis will be on the Family Support Centres, as well as, for example, the importance of maternity clinics, school psychosocial services, preventive family work, and flexible childcare services. From the perspective of the demand for child protection, one key challenge is regional social deprivation. In an area with a wide range of social and health risks, the threshold for addressing child protection issues is also higher. In this case, the emergence of concern requires quite serious shortcomings in the child's situation or care. This also emphasises the importance of strengthening the sense of community in residential areas. Furthermore, there needs to be an emphasis on the perspective of public health. At the municipal level, morbidity is an important predictor of the need for child protection; thus, all factors contributing to public health are also potentially significant for child protection. This highlights the importance of public health services and health promotion, as well as the accessibility of mental health services and substance abuse services. Collectively, the promotion of socially sustainable regional development requires multiple measures to support families at risk.

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## IMPACT OF THE CHANGED CIRCUMSTANCES (COVID-19 PANDEMIC) ON THE POSITION OF CONSUMERS IN PACKAGE TRAVEL CONTRACTS

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### ABSTRACT

*It is a well-known fact that tourism as an industry makes an extremely large contribution to the Croatian economy. In tourist traffic, the most frequent type of travel, travel is organized under holidays package travel contracts. One of the issues that have become extremely topical in the last few years, due to the situation of the Covid-19 outbreak, is the question of the impact of the changed circumstances on the possibility and conditions of termination of package travel contracts and the rights and obligations arising from such method of termination of the contract for the contracting parties. Due to the importance of this issue, the legal provisions of the Law on the Provision of Services in Tourism have also been amended, which stipulates special conditions related to the termination of the contract and the issuance of vouchers under the conditions of the specific circumstances caused by the COVID-19 outbreak, relating to outstanding package travel contracts, which were to be implemented after 1st of March 2020. The legal framework of the provision of package services, impact of the changed circumstances on the possibility and conditions of termination of package travel contracts as well as the legal consequences of the termination of the contract, as the topics of this paper, are all of great importance both for the providers of these services, namely travel agents, as well as users of these services – passengers (consumers).*

**Keywords:** *Act on the providing of Services in Tourism, consumer, termination of the contract, causula rebus sic stantibus*

### 1. INTRODUCTION

The declaration of the COVID-19 epidemic and the necessary measures taken by the competent authorities to contain the epidemic have led to a significant decline in economic activity, one of the most affected by those measures were sectors of tourism. Restrictions on movement due to COVID-19 also brought disturbances in consumer protection. (Brunn, Gilbreath, 2022. p. 478.) Therefore, due to the need to eliminate and mitigate economic disruptions and enable providers of tourism services to easily bridge the period of reduced economic activity, the legal regulation of the right to terminate the package deal in special circumstances caused by the COVID-19 epidemic was necessary, i.e. a kind of suspension of the right to terminate the contract for a period of 180 days was due. Although on 18 March 2020 the European Commission adopted guidelines on the interpretation of EU regulations on passenger rights in the context of evolving corona virus situations, which highlighted that the right to choose between a refund and the issuance of coupons for re-routing cannot affect the passenger's right to choose a refund, they do not cover Directive (EU) 2015/2302 of the European Parliament and of the Council of 25 November 2015 on package travel and linked travel arrangements (Official Journal of the European Union L 326/1).

Therefore, in this particular case, national law had to apply. Booking a holiday in a package consumer buys a combination of two or more different types of travel services for the same trip or holiday. These services may include transportation, accommodation, car rental or any other tourist service under special conditions. The package may be pre-organized, i.e. consist of a series of services combined by the travel organizer or travel agency, or adapted to the traveler, or consist of services that are chosen by the user himself before the conclusion of the contract. A trip shall be considered as a package if, under a single contract, the customer has booked travel services combined by the trader or assisted by the trader, such as the tour operator or touristic agency, (classic or online) or if it has booked travel services under separate contracts with different service providers and one of the following conditions is met: travel services have been purchased at one point of sale, (such as a travel agency, call center or website) and the customer chose the services before accepting the payment, i.e. before entering into the first contract. (This would be the case, for example, when different travel services are placed in an online shopping cart or otherwise selected before the conclusion of the contract). If the services are sold at a lump sum or total price, the services are advertised/sold as a "package" or under a similar name or the travel services are combined after the conclusion of a contract within which the buyer can choose from the offer of travel services. Furthermore, when selling a package the buyer buys the service from different tour operators through the related booking process on the Internet, in which the first agency forwards the name, e-mail address and payment details of the buyer to the second agency and the second contract is concluded no later than 24 hours after the first contract. A combination of one travel service such as accommodation and other tourist services, such as a guided tour, a ticket to a concert or sporting event or a sports equipment rental, can be considered a package if another service accounts for 25% or more of the total value of the trip or that service is an essential element of the journey. Before booking a package, a point of sale (for example a website or booking application) or travel agency must provide the customer with all the standard information about the package travel arrangements. The buyer must also receive clear information on his rights in the form of a standardised EU form, which states that the offer refers to the package and sets out its rights. One of the issues that have become extremely topical in the last few years due to the situation of the Covid-19 outbreak, is the question of the impact of the changed circumstances on the possibility and conditions of termination of the contract and the rights and obligations arising from such a method of termination of the contract for the contracting parties. Due to the importance of this issue, the legal provisions of the Law on the Provision of Services in Tourism have also been amended, which stipulates special conditions related to the termination of the contract and the issuance of vouchers under the conditions of the special circumstances caused by the COVID-19 outbreak relating to outstanding package travel contracts, which were to be executed after 1.st of March 2020. Legal position of passengers (consumers) in the package contract, possibility and legal consequences of termination of the package agreement, as the topic of this paper are of great importance both for the providers of these services, primarily travel agencies, and, if not even more, for users of those services – passengers (consumers).

## **2. PASSENGER (CONSUMER) LEGAL POSITION IN PACKAGE TRAVEL REGULATIONS**

One of the most important areas in which the legal protection of the passengers in package travel regulation is reflected, certainly represents extensive and detailed regulation of the content of precontractual information as well as the passengers right to cancel the contract without penalty if there are unavoidable and extraordinary circumstances occurring at the place of destination or its immediate vicinity and significantly affecting the performance of the package, or which significantly affect the carriage of passengers to the destination.

The later has become significantly important for the legal position of the passenger (consumer) due to the recent outbreak of COVID-19. The Organizer, as well as the seller, if the package sales through the seller, shall, before the passenger agrees to any agreement about travel in package-or any arrangement with an appropriate offer, provide the passenger with appropriate legally binding standard information via the appropriate form (the provision of paragraph 1. Article 29., Law on the Provision of Services in Tourism, Official Gazette 130/17, 25/19, 98/19, 42/20, 70/21, hereinafter: ZPUT), concerning the main characteristics of the travel, as well as the destination/destinations, plan trips and the period of stay, with dates and, if included, accommodation, the number of nights the involved, the means, characteristics and categories of transport, the place of departure and return with a date and in time or place, and the duration of the stop and transport links. If the time is not yet determined, the organizer and, where appropriate, the seller shall notify the passenger of the approximate time of departure and return, the location, the main features of and, where appropriate, the type and category of accommodation in accordance with the rules of the destination country, the diet plan, visit, excursion/shore excursions or other services included in the total price agreed upon for the package-arrangement. If it's not obvious from the context, information about if some of the travel services are provided within the group, and where possible, information on the approximate size of the group, if the use of tourist services depends on the effective oral communication, about the language in which these services will be provided, and whether the journey or holiday is generally suitable for persons with reduced mobility and, at the request of the passenger, precise information about the suitability of the travel or vacation, taking into account the the needs of the passengers. The traveler should be also provided with information about the company and the geographic address of the organizer and, where appropriate, the seller, as well as their telephone number and, if applicable, e-mail address, as well as the total cost of the package-arrangements, including taxes and, where appropriate, all additional fees, charges and other costs, or, if those costs cannot be reasonably calculated prior to conclusion of the contract, an indication of the types of additional costs which will have to bear may be a traveler, methods of payment, the minimum number of persons required to the exercise of the package-the arrangement as well as the time limit within which the organizer may terminate the contract about the journey in a package before the start of the package. Passenger should be provided with general information on the requirements of the destination countries in connection with passports and visas, as well as information about the right of passengers to the passenger may terminate the contract at any time before the beginning of the package with the payment of adequate compensation for the termination of the contract or, where appropriate, the standard fee for breach of contract, required by the organizer. The obligation of the travel organizer in the package arrangement is also to inform passengers about the optional or compulsory insurance to cover the cost of the termination of the contract by the passenger or the cost of the provision of assistance, including repatriation, in the event of an accident, illness or death. All of the above information should be provided in a clear, understandable and easily visible way, and when rovided in writing must be legible and written in the Croatian language, or some other clear and understandable language to the passenger. Binding character of precontractual information, prevent their subsequent modification, unless the parties explicitly agree. In the traveling in package-arrangement contract or the certificate of the contract must be specified the full content of the agreement of the contracting parties, information about the special requirements of passengers which the organizer have accepted, responsibility of the organizer for the proper execution of all services included in the travel contract, the duty of the organizer to provide assistance to the passenger in difficulties (which have the character of a higher power), on the name of the insurer, as well as on available internal procedures for addressing complaints and mechanisms for alternative dispute resolution related to the contract, as well as about the authorized bodies for the alternative dispute resolution and on the platform

for the online address these disputes, in accordance with the provisions of a special law on alternative resolving consumer disputes. The provision of paragraph 2 of article 36 ZPUT 17 provides that if the organiser before the start of the package is forced to significantly alter any of the main characteristics of the travel services, or can not meet the agreed special requirements of passengers, or propose an increase in the prices of package-arrangement for more than 8%, the passenger can, within a reasonable time determined by the organizer, accept the proposed modification or terminate the contract without paying compensation for breach of contract.. The provision of article 43. provides the right of passengers to lower the prices, and the provision of article 44. guarantees the passenger the right to compensation caused by damage, regardless of the sale price or termination of the contract, and the right to demand from the organizers the appropriate compensation for any damage suffered as a result of any non-compliance, and the organizer is obliged to compensate the damage without undue delay.

### **3. TERMINATION OF THE TRAVEL CONTRACT DUE TO EXTRAORDINARY CIRCUMSTANCES**

When does the passenger have the right to terminate the travel contract in the package? The passenger may terminate the travel contract in the Package at any time before the start of the Package. In the case referred to in paragraph 1 of Article 37 ZPUT 21, the organiser shall lose the right to the agreed price of the package and may require the passenger to pay an appropriate termination fee which can be justified. The package travel contract may establish reasonable standard termination fees based on the period between the moment of termination of the contract and the start of the package and the expected savings in the costs of the organizer and income from the provision of travel services to another user. If the contracting parties have not established standard fees for termination of the contract, the amount of the termination fee is determined according to the price of the package minus the amount of cost savings the organizer and revenue from the provision of travel services to another user. At the request of the passenger, the organizer is obliged to explain the amount of the fee for termination of the contract. The Act on Amendments to the Law on the Provision of Services in Tourism Official Gazette No. 42/2020) is in the Law, in order to enable as simple and easy as possible to exercise the passenger's rights to compensation due to the inability to achieve the agreed packages, in the unprecedented circumstances of the outbreak of the COVID-19 pandemic, a provision was added regarding the right to terminate the contract and issue vouchers (Landini, 2021, p. 8.) which provisionally stipulated that for outstanding package travel contracts to be carried out after 1. st of March 2020., (when the COVID-19 epidemic was officially declared in Croatia). the passenger has the right to terminate the travel contract in the package after the expiration of 180 days from the date of termination of special circumstances, and the tour operators issue a voucher for the same passengers (provision of the article 38.a. of The Act on Amendments to the Law on the Provision of Services in Tourism). If the passenger decided to refund the funds, the organizer had to make a refund of the paid funds within 14 days after the expiration of 180 days from the termination of special circumstances. The voucher issued for the outstanding package travel contract was covered by a previously agreed insolvency guarantee and had to contain the security information referred to in Article 50.(5) of the The Act on Amendments to the Law on the Provision of Services in Tourism.) The passenger submitted a request for the exercise of rights under the aforementioned provisions of the Law, to the travel agency to which he paid for the trip. On June 26, 2021, the Law on Amendments to the Law on Provision of Services in Tourism (Official Gazette, No. 70/21, hereinafter: ZPUT 21) entered into force. This Act, among others, deletes the aforementioned Article 38a. After the entry into force of the amendments in question, the passenger who has been issued a voucher for an unfulfilled travel contract in the package has the right to terminate the package travel contract and the right to the right to refund all payments made.

The organizer is obliged to the passenger, in accordance with Article 37, paragraphs 6, 7 and 8. ZPUT, in the case when the passenger terminates the contract, and in accordance with Article 38, paragraphs 2 and 3 where the contract is terminated by the organiser, to return all payments made for the benefit of the traveller, without undue delay, and no later than 14 days from the termination of the package travel contract. In this case, the passenger is not obliged to pay any fee for termination of the contract, but he is also not entitled to additional compensation. If the passenger has not used the issued voucher to conclude a replacement travel contract within one year of its issuance, it will be considered that the contract has been terminated and the passenger has the right to refund of all payments made. If the traveler has not been issued a voucher, and the traveler has, before the entry into force of the changes in question, contacted the travel agency with a request for a refund of the paid funds the travel agency is obliged to return the funds to the passenger within 14 days of the entry into force of the changes in question. The passenger has the right to terminate the travel contract in the travel package before the start of the package without paying any termination fee (Article 37, paragraph 6. ZPUT 21) due to extraordinary circumstances which have taken place at or in its immediate vicinity and which have a significant impact on the fulfilment of the package or which significantly affect the carriage of passengers to the destination. What are these, changed circumstances, by the appearance of which the passenger acquires the right to terminate the package contract? ZPUT 21 defines extraordinary circumstances that could not have been avoided as a situation beyond the control of the party referring to such a situation and the consequences of which could not have been avoided even if all action had been taken. Point 31 of the introduction of the Directive mentions warfare, other serious security problems such as terrorism as an example of a destination emergency. significant risks to human health such as outbreaks of serious illness at the destination of travel, or natural disasters such as floods and earthquakes or weather conditions that make it impossible to travel safely to the destination agreed in the package travel contract. The amendment and termination of the contract may occur by the will of the contracting parties and for the reasons provided for by the Civil Obligations Act (Official Gazette, No. 35/2005, 41/2008, 125/2011, 78/2015, 29/2018, 126/2021., hereinafter: ZOO). The most prominent reason for the unilateral termination of the contractual relationship is the failure to fulfill the obligations of one of the parties, arising from the principle of *pacta sunt servanda*, one of the fundamental principles of law of obligations. However, the ZOO provides as a basis for the amendment and termination of the contract by the initiative of one contracting party and an institute that represents an exception to the above principle, which is the *clause rebus sic stantibus*. Prior to the conclusion of the contract, i.e. when making a decision to enter into a particular contractual relationship, each party assesses the circumstances in which the contract is concluded, which affect the contract and therefore on the decision of the contractor to conclude the contract. Not only do the parties evaluate these circumstances to preserve their interests; they are obliged to take those circumstances into account the degree of care with which they are otherwise obliged to act in legal transactions. In addition, not only are co-contractors obliged to take into account the circumstances that exist at the time of entering into a mandatory relationship, but they are also obliged to take into account the future circumstances that, by the nature of things, can be reasonably be expected. However, after the conclusion of the contract, opportunities can change so much that the fulfillment of the obligations made becomes extremely difficult and fraught with a great loss for one of the contracting parties. As a rule, it is such a violation of the principle of equivalence of mutual performance that insisting on consistent respect for the principle of *pacta sunt servanda* seems unfair (Klarić, Vedriš, 2014., p. 482.). The ZOO lists as a basis for the application of the clause extraordinary circumstances arising after the conclusion of the contract, which could not have been foreseen at the time of conclusion of the contract, due to which the fulfillment of the obligation for one contracting party becomes excessively difficult or would inflict an excessively large loss on

it.(Article 369., paragraph 1. ZOO) First of all, it should be noted that the application of the *rebus sic stantibus* clause, by the nature of things, comes into account in contracts where there is a certain time lag between the conclusion of the contract and the maturity of the contract. When an obligation is due to be fulfilled immediately upon conclusion of the contract, it is fulfilled in the same circumstances in which the contract was concluded, so there is no room for the application of the clause. Also, its application comes to the fore, especially in contracts with permanent or successive prestations where, as a rule, there is longer duration of the contract and a greater time lag between the conclusion of the contract and the fulfillment of certain obligations, which is the case in Package travel contracts. The prerequisites for the application of the clause according to the ZOO are bilateral obligation of the contract, extraordinary change of circumstances arising after the conclusion of the contract, unpredictability, insurmountability and inevitability of circumstances. A change of circumstances may not be invoked by the affected party who could have avoided or eliminated the circumstances, or who was obliged to take them into account when concluding the contract. In order for a change of circumstances to give the affected party the right to demand the modification or termination of the contract, it is necessary, with the fulfilment of all prerequisites, that due to such a change or such circumstances, the performance of the contract has become excessively difficult for that party or would have caused it an excessively large loss. Therefore, the new circumstances must result in the fulfilment of the obligation possible only with additional and excessive efforts that the contracting party did not count on at the time of the conclusion of the contract.(Šafranko, 5/2010, p. 1292.) It shall take into account the difficulties due to which the result which the contractors had in mind when concluding the contract cannot be achieved or which lead to a violation of the principle of *equa mutual value*.(Loza, 9/1978, p . 52.) Modification or termination of a contract cannot be requested by the affected party who has fulfilled his contractual obligation. For the purpose of mitigating the damage that may result from the above for a Contracting Party that has not been affected or is less affected by the impact of extraordinary circumstances, ZOO in Art. 369.paragraph.4. provides that the affected party's request for termination of the contract will not be met if the other party offers or agrees to have the relevant provisions of the contract fairly amended. The passenger has the right to terminate the travel contract in the Package before the start of the Package without paying any fee for termination of the contract, (Article 37.paragraph 6.ZPUT 21) due to unavoidable exceptional circumstances which occurred at or in the immediate vicinity of the destination and which significantly affect the fulfilment of the package or which significantly affect the carriage of passengers to the destination. Furthermore, passenger is entitled to a full refund of all payments made for the package, but is not entitled to additional compensation (Art.37.paragraph 7. ZPUT 21). The organizer may terminate the travel contract before the start of the Package and fully refund to the passenger all payments received for the Package without the obligation to compensate the passenger (Article 38., paragraph 2. ZPUT 21) if the organizer is prevented from performing the contract by extraordinary circumstances that could not have been avoided and if the passenger is informed of the termination of the contract without undue delay before. The organizer is obliged to return to the passenger all payments made for the benefit of the passenger without undue delay, and no later than 14 days from the termination of the travel contract in the travel package.

#### **4. CONCLUSION**

The COVID-19 pandemic not only caused a health crisis, but also a global economic crisis. The widespread impact led the economy to changes to new normal conditions. This raises many important research topics in various fields such as health economics, public economics and public finance, institutional economics, international trade, environmental economics, development economics, behavioral economics, and many others to provide references for

decision-makers. Such studies not only help to accelerate the recovery of the tourism industry from short-term shocks caused by the pandemic and economic crisis, but also the recovery of the national economy (Haryanto, 2020., p. 1-5.). The circumstances caused by the COVID-19 pandemic have affected the disabling of travel and the closure of borders, as a result of which airlines have suffered huge losses. The work of travel agencies and the realization of contracted package travel slots are also prevented, which is why the issue of termination of this type of contract has been actualized. To help bridge the period of reduced economic activity, the legislature intervened in the ZPUT and prescribed a way of dealing with the special circumstances caused by the COVID-19 outbreak. The pandemic sampled by this disease has also significantly affected the legal position of passengers (consumers) in the package contract. Namely, the passenger (consumer) has the right to terminate the travel contract in the Package before the beginning of the use of the package without paying any fee for termination of the contract due to unavoidable exceptional circumstances which occurred at or in the immediate vicinity of the destination and which significantly affect the fulfilment of the package or which significantly affect the carriage of passengers to the destination. The passengers right to terminate the package agreement before starting the use of the services included in the package is conditional on the occurrence of these extraordinary circumstances, which, in turn, must fulfil certain, legally assumptions, in order to be taken into account. These assumptions are that extraordinary circumstances were unavoidable for the traveller and that they significantly affected the fulfilment of the package or the transport of the passenger to the destination. There is no definitive threshold by design when circumstances are unavoidable and extraordinary. Whether or not there are, depends on context and how a situation is interpreted by multiple sources. This interpretation is endorsed by the most relevant threshold test set out in *Lambert v Travelsphere Limited*. Here, relating to the SARS pandemic, the judge found that whilst a travel company cannot shut its eyes to obvious danger, it can confirm that the holiday can go ahead as intended until there is not a “flicker of hope” that the holiday can be performed. (Saggerson, Prager, 2004., p. 183.). In *Dennison v Loveholidays* , unreported, Lincoln County Court [15.10.21] the customer cancelled her holiday because the government had imposed a requirement for travellers to quarantine upon their return. The court ruled against the customer, stating that there was no reason why the quarantine rule would affect either carriage to the destination or performance of the package. What we see from this ruling is that is very important for the unavoidable and extraordinary circumstances to have a clear impact on the performance of the package holiday, in order for refund rights to arise. In *Kirk v We Love Holidays*, unreported, Wrexham County Court [22.03.22] the hotel which the customers were meant to be staying at was closed due to circumstances relating to COVID-19. The tour operator offered a like-for-like substitute but the customers decided to cancel their trip. On appeal, the court found that the substitution of the hotel did not constitute a significant change. This interpretation was supported by the fact that the specific point, regarding the permissibility of like-for-like hotel substitution, was dealt with in their contract. Therefore, the customers were not entitled to a refund in this instance. There is no, as can be seen from the recent case law of the British courts, a general rule on the basis of which it could be said in which cases and in what exactly way pandemic is treated as a justification for non-performance of a contractual obligation that would not entail liability for damage. In particular, it seems to us that it is part of the definition of extraordinary circumstances from Art.v37. paragraph 6.vZPUT 21 which refers to "circumstances that significantly affect the fulfilment of the package" imprecisely and rather vaguely defined. This wording leaves space for discretion in determining whether the circumstances actually constitute having an impact on the execution of the specific travel package and to the degree that a court would consider these to be “significant” enough. There is a lack of clarity in this regard, certain vagueness and ambiguity, perhaps in order to allow court to make an assessment and interpretation that is specific to the circumstances of each case.

This wording, non the less leaves, in authors opinion a certain degree of confusion on the passenger's behalf. It is therefore necessary, we are of the opinion, to study the elements of each separate contractual relationship, the national rules relating to the same, to determine the applicable law in the case of a cross-border contractual relationship between parties from different EU Member States or a contractual relationship with a third-country entity. It is necessary, furthermore, to determine the content of European or international law applicable to a specific case, as well as to establish official positions and measures regarding the protection against COVID-19 of each of states whose territory was in any way involved in the performance of a contractual obligation. As for the business of companies, i.e. entrepreneurs, both in relation to business on the territory of the Republic of Croatia and in cross-border issues, the content of each contract and the regulation of extraordinary circumstances in the contract is very important. Due to the extraordinary circumstances caused by the COVID-19 pandemic, the quality of the contracted procedure in the event of extraordinary circumstances has been put into focus. The past period will certainly lead to the fact that in future contractual relations more attention will be paid to the above issues.

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## **INFLUENCE OF TWO-STEP FLOW THEORY SUPPORTED BY NEUROMARKETING METHODS ON CONSUMERS PERCEPTION – THE THEORETICAL OVERVIEW**

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### **ABSTRACT**

*The purpose of this research is to analyze the influence on consumer perception through neuromarketing methods as well as to analyze the influence of two-step flow theory supported by neuromarketing methods. The choice of different forms of neuromarketing, the popularity of influencers and their opinion leadership has resulted in the convergence of the promotion of products and brands. By considering neuromarketing methods and techniques, the research objective is to determine the cognitive perception that customers have of the stimuli transmitted by influencers. The two-step theory proposes that influencers as opinion leaders have a stronger effect on the public than the media to a sense of trust and the virtual relationship people have with them. To fulfil the research objective set, the authors used description, analysis, synthesis, and inductive and deductive research methods as the research technique. to measure the cognitive processing of stimuli published by social media influencers.*

**Keywords:** *Influencers, Marketing, Social Media, Communication, Two-Step Flow Theory, Neuromarketing*

### **1. INTRODUCTION**

As an extensive scientific field, marketing includes presentation of products with a focus on the needs of consumers on one hand, while on the other, includes the decision-making process of customers. Information technology has caused a profound change in the economy, culture and politics which impacts both the life of an individual as well as society (Tankosic et al. 2020: 76). With the highlight on the last decade, conventional marketing research has been significantly advanced by the emergence of neuromarketing (Mileti, Guido and Prete, 2016). Since neuromarketing is developed from neuroscience, it is important to highlight that the prefix neuro comes in three terms: neurological science, neuroeconomics and neuromarketing. Plassmann (2012) points out that neuroscience is an area that studies the nervous system that tends to understand basic biological needs. In other words, through neuroscience, we can show human behavior, emotions, and thoughts (Plassmann et al. 2012). Neuroscience is therefore basis for the next two terms: neuroeconomics and neuromarketing. According to Sanfey, Loewenstein, McClure and Cohen (2006) neuroeconomics uses techniques offered in the field of neuroscience and attempts to investigate brain processes that are related to it but focuses on decision-making and economic aspects at the same time (Sanfey et al. 2006) while the key question that arises in studying the field of neuromarketing is what customers really want and why? To be more precise, neuromarketing can be defined as “a tool which combines neuroscience and physiological techniques in order to get insights in customer behavior for

effective prediction of customer preferences in decision-making process” (Nilashi et al., 2020: 23). A comprehensive definition of neuromarketing considers that it is viewed as a part of neuroeconomics and, consequently, neuroscience dealing with marketing issues, using methods used in neuroscience discipline (Ariely, Berns, 2010). The primary goal of neuromarketing is to evaluate several instruments related to marketing, such as: consumer behavior in purchasing, promotion, pricing and product development, communication, product distribution, branding and decision making (Madan, 2010). Therefore, managers while using neuromarketing face an important task - to evaluate which of these instruments is under the greatest influence of neuromarketing and what it can mean for the future business (Iloka, Onyeye, 2020). The effects of neuromarketing show implicit and automated processes that influence the decision-making process when targeting customers. In this way, companies could have an insight into what consumers really want and what their feelings are while shopping (Arthman, Li, 2017). As an extension of these advanced marketing techniques, social media influencers are also included in this business equation as another significant factor, as they post content about items or services offered by the business (Vaiciukynaite, 2019). In this sense, the two-step flow theory in relation to neuromarketing techniques placed the influencers into the focus of research. After Introduction, the paper presents research methods used. Following sections include Two-step flow theory and Empowering Influencers with neuromarketing methods, consecutively. The last segment of the paper is Conclusion that gives a summary and discussion on future work, as well as limitations of this study.

## **2. METHODOLOGY**

Research methods are adapted to the subject and objectives of this paper. Description will describe observed phenomena of neuromarketing, two-step flow theory and influencers. Then, analysis will be carried out by analyzing and explaining all factors of the research subject individually and in interdependent relationships in the following sections: Two-step flow theory and Consumer’s Perception, and Empowering Influencers with Neuromarketing Methods. The third research method applied will be synthesis, which will achieve the merging and synthesis of all analyzed and systematized knowledge about the elements of the research subject. Finally, inductive, and deductive research method will be used to formulate synthetic conclusions.

## **3. TWO-STEP FLOW THEORY AND CONSUMER'S PERCEPTION**

A study conducted by Zak and Hasprova (2020) showed that the promotion of some products through influencers may be more advantageous than others. When it comes to purchasing clothes, footwear, cosmetics, and, surprisingly, services, influencers will have the biggest impact. Meanwhile, people rely heavily on other factors to buy food, jewelry, and electronics, but it is not excluded that influencer marketing could affect them as well (Zak and Hasprova, 2020). Influencers play a significant role in the evolution of what we still know as mass communication. They affect the formation of consumer attitudes and actively participate in setting the agenda by choosing and imposing topics of importance that are also adopted by the traditional mass media (Ercegovic, 2017). Elihu Katz and Paul Lazarsfeld’s (1955) empirical studies during and after World War II led them to the conclusion that opinion leaders and group leaders have a significant impact on how other group members accept and comprehend messages, they receive through mass communication channels. The research which led to two-step flow theory came from a case study which was done during the presidential elections in USA. The study focused on decision-making process, and what Katz and Lazarsfeld expected as a result was empirical support for their claim that media messages have direct impact on people’s intentions during voting. However, the researchers were surprised to learn that among the responses, informal and personal contacts were mentioned much more often than exposure to mass media as sources of influence on voting behavior.

According to this theory mass media content moves in two different phases. First, individuals - opinion leaders, pay attention to the mass media and the messages that are sent through those channels, and then, on the second level, opinion leaders convey their own interpretations along with the content of media messages (Katz and Lazarsfeld, 1955). During the research, the term “personal influence” refers to the process of intervention between a media message and the audience’s final reaction to that message. The research further led to the conclusion that the attitude of opinion leaders in primary groups are quite influential in making people change their beliefs and behaviors to be similar to their own. Among other things, the two-step flow theory has improved the understanding of the situation in which mass media influence decision-making process (Ercegovac, 2017). Also, this theory represents one of the most convincing criticisms of the biological-mechanical S-R theory in mass communication (Miletić and Miletić, 2021: 358) which emphasized that each message, as the content of communication, represents a certain stimulus, which causes an identical response, so all people, — in other words, individuals, react to that message more or less equally (Miletić and Miletić, 2021: 43-44). However, that “tradition of effect” had to be abandoned (Milivojević, 2015: 52), since further research showed that a person in society is an individual, and that depending on many contextual, social and psychological factors (Katz, Blumler and Gurevitch, 1974: 510), such as personal interest, age, education, ethnicity, environment and culture that surround them social and/or class status etc. expects and understands (decodes) media messages and adds a connotative value to them (Hall, 1980; Fiske, 2011). Thus, various communication theories that consider these factors have been developed. Lazarsfeld, Katz and Gabriel Tarde (Katz, 2007) once concluded that the mass media are social phenomenon which, in addition to the technical and technological aspect, gave mass media some broader frameworks, especially in terms of research of certain communication models. People’s desire to be informed, especially about the events taking place in their vicinity, not only led to the creation of mass communication channels thanks to technical and technological development, but also deepened this same desire, as well as the custom of talking about these news in different social situations and groups. Even at the beginning of the development of the public sphere, that is, with the emergence of the literary public sphere that Habermas was referring to, members of different social groups gathered in public to discuss issues of common interest (Habermas, 1991: 51). As a practice, this has been carried over into recent times, and it has been extended from the real, physical space to the internet as a virtual public space within which social media are also developed. This virtual space, after the appearance of Web 2.0, not only expanded and improved the method (channels) of dissemination of media messages, but also became a place where these media messages and various issues of public interest are debated. Thanks to the platforms for user-generated content, such as social media networks, news about events and other information in that virtual space can be published, but at the same time, they can be also discussed among the users of these platforms which were on the receiving end (Ercegovac, 2017). From the point of view of the two-step flow theory, social media represent a virtual space for mutual communication, which plays a vital role in the transmission of information and reinterpretation of media content, as well as the influence on other members of the group when it comes to understanding the meaning of media messages that are reinterpreted. Influencers, as prominent members of social media groups, in this sense assume the role of opinion leaders, since, by standing out in certain areas and imposing their own views and beliefs, which other users of social media on the internet adopt, they take the position in which they fully correspond to the characteristics of this type of primary group members (Case et al., 2004; Gräve, 2017; Freberg et al., 2011; Tafesse and Wood, 2021; Ouvrein et al., 2021). Therefore, influencers in this relationship assume that role and influence the reception and understanding of media messages because they personify values that are a cohesive factor in the primary group, because they are better experts and more competent than other members of the group, since they have a

hierarchically higher social position outside the primary group and because they are representatives and proxies of their group in the network of intergroup interactions (Miletić and Miletić, 2021: 358). In the book "Personal Influence" about the already mentioned research that was published ten years after the Second World War (1955), Katz and Lazarsfeld point out two opposing views on the mass media, where on one side there is the concept of reacting at a kind of town meeting from the first hand, where the opinion of the public is considered, while on the other side, there is an idea of agents of evil who are able to diminish the importance of democracy by stirring public opinion. They also note that these two views are not so far apart, as both envisage the process of mass communication to an atomistic mass of citizens ready to receive a message, and each message as a strong, direct stimulus that would generate an immediate response. Both views see the media of mass communication as a new "unifying force" in a society with reduced interpersonal relations: where, like in a simple nervous system - they reach every eye and ear (Katz and Lazarsfeld, 1955: 16-18). Among those attitudes about omnipotent mass media, which deliver messages to a mass audience - a passive mass, which just waits to receive media content, Katz and Lazarsfeld (1955) claim, there are intermediate steps, which were recognized during the period of mass communication research, and which correct the effects of that communication. They consider these intermediate steps to be "exposure, medium, content and predispositions" (Katz and Lazarsfeld, 1955: 20). In their study, these steps or factors have a variable value, since they believe that each recipient of media messages, a member of the mass audience, is subject to these variables in a different way due to their individuality, and therefore to the influence of the media. Also, these two scholars emphasize that each of the mentioned factors actually contributes to the effects of mass media campaigns, which leaves room for another intervening variable: interpersonal relationships, which are actually the focus of their research. Out of the four factors they highlight, exposure and predispositions relate to receiving a message, while medium and content belong to transmission (Katz and Lazarsfeld, 1955: 24). An opinion leader they define in a way where that leadership is applied accidentally, sometimes unconsciously and unknown, within the smallest groups, such as a circle of friends, within family members or among neighbors, since it is almost invisible, and most certainly, inconspicuous, a form of leadership at the level of face-to-face relationships, within ordinary, intimate, informal, and everyday contact (Katz and Lazarsfeld, 1955: 138). Presenting the results of their research, Katz and Lazarsfeld (1955) conclude that opinion leaders are actually more exposed to the media than the rest of the group and are therefore more open to their (mass media) influence, and that the results show that:

- 1) being more interested in a topic is not enough to become an opinion leader in that domain;
- 2) the factors of status level, life cycle and insecurity are also determined to varying degrees in relation to the topic itself;
- 3) that greater interest in a topic result in opinion leadership primarily when that individual communicates with those who are also interested in the same field, for example, with people who would like to hear other people's opinions (Katz and Lazarsfeld, 1955: 326-327).

According to Gangadharbatla and Valafar (2017), several theories explain how some information is spread and how the word of mouth model affects the attitudes and decision-making process of other users of this social media on the internet. The authors also point to studies that examine the influence of media and social networks on individuals and groups and conclude that the two-step flow theory is dominant in all these works. Most people form an opinion about a particular product or event when they are exposed to the views of an opinion leader, while the opinion leader is mostly influenced by the mass media. This conclusion conflicts with the one-way flow theory, also known as the magic bullet theory (Miletić and Miletić, 2021: 357), which claims that people are directly (without intermediaries) exposed to the influence of mass media.

These two researchers say that it is certainly obvious that people are constantly exposed to mass media on an individual level, regardless of whether it is television, radio, newspapers, or the internet, but that it is more likely that the opinions and attitudes they bring are formed second hand, such as in a two-step process, which is especially evident in the opinions expressed on social media networks (Gangadharbatla and Valafar, 2017). With the emergence of new media platforms such as YouTube, Facebook, Instagram, Twitter, as well as other social networks and sites created after the Web 2.0 version, it is considered that the democratization of flow of information (Ercegovac, 2014: 280-281), as well as influence has been well established. Today, even traditional media use digital technologies in different stages of news production, as well as different platforms for their dissemination, and consequently the audience has greater freedom of choice, in the way where they can decide which of the available information will be obtained (Torlak, 2013: 367). Social media radically changed the way users get information, news, opinion, but as with traditional media (Cheong and Park, 2015), there is also a major influence of the opinion leader. These people or organizations, which can include news outlets, pressure groups and even celebrities, act as a primary source of information and opinion, and the study suggests that the way information is spread on social media is no different than traditional media. In other words, even the space that should be democratized in that sense and without the direct influence of "gatekeepers" is occupied mainly by the views of opinion leaders, which results in a virtual community, which has a strong influence on how and at what speed certain information spreads in social media. This can best be observed by analyzing the hashtags, which in a simple way gather all comments on a certain topic in one place (Ercegovac, 2017: 259). Although mostly related to the interpretation of media messages, opinion leaders, and thus influencers as one of the categories of this term, base their influence over the rest of their group to the greatest extent on the trust they have earned from their community. Some scholars (Lee et al., 2007) believe that over the years, trust has become a more important issue in marketing. Although consumer trust in companies and products is obviously important, many additional levels of trust have been studied (Ganesan & Hess, 1997) in marketing research. Lee et al. say that mutual trust is necessary for interorganizational transactions like joint ventures, strategic alliances, and buyer-seller dyads. On one hand, customer trust in marketing promises is essential if companies are to be taken seriously and eventually influence consumers' purchasing decisions (Heath and Heath, 2008). Lee et al. (2007) also claims that when one considers that companies marketing fair trade, organic, or other socially beneficial items must rely on consumer faith in their promises for success, the social utility of trust becomes apparent. Relationships in an organizational setting also rely on shared trust between the parties (Lau & Lee, 1995). Without trust, interactions are dominated by opportunistic behavior, which again makes it difficult for parties to establish long-term relationships and creates less-than-ideal circumstances for everyone (Lee et al., 2007). When it comes to influencers being opinion leaders, this trust goes beyond the mere interpretation of media messages, which is also reflected in the fact that the field of influencer marketing has been developed. Since influencers affect consumers with their thoughts, attitudes, and opinions and thus, they can significantly influence trends in demand for particular products (Zak, Hasprova, 2020). In neuromarketing, consumers make buying decisions with the purchase keys, which would be activated when triggered by a specific part of the brain responsible for the administration of making decisions (Jordão et al. 2017). The results showed that neuromarketing techniques may assess important factors influencing purchasing decisions, and these findings can then be used to new product development. Consumers are often unable to express their own wishes and needs because the brain closes internal information, which could express their true desires and needs of consumers (Nilashi et al. 2020).

#### **4. EMPOWERING INFLUENCERS WITH NEUROMARKETING METHODS**

Two most important machines used to analyze human brain activity in neuromarketing are functional magnetic resonance and electroencephalography (Mohsen, Mostafa, 2020). Functional magnetic resonance uses powerful magnetic and radio waves for high-quality scanning of the brain. Also, with the help of this machine, the largest number of scans in the field of neuromarketing is realized. Namely, through the magnetic resonance scanner, measurement of the level of oxygen in the blood in certain parts of the brain is performed. The oxygen level in the brain changes due to the activity that occurs in it. Results are displayed in different colors in various parts of the brain. Images displayed by the device should not be interpreted without expert analysis (Morin, 2011). Electroencephalography is another way of looking at the consumer's mind. This technique includes electrodes placed on the skull, which is shown by the neuron activity. obtained by this method is in high time resolution and detects every "movement" of neurons (Yadava et al. 2017.). Most experts who deal with this issue point out that electroencephalography is the most practical, most cost-effective, and most suitable method for scanning the brain, primarily because of the ease of use of the device. When we look at the above brain imaging methods, we conclude that with the help they get similar results. Parts of the brain are switched on during scanning, depending on the sounds, smells, images, and messages that are displayed (Avinash et al. 2018: 55-67). At the same time, traditional interviewing of respondents is carried out, and a clear connection with the respondent's opinions and his responses in the questionnaire is obtained. The methods presented in this section of the text seem to the majority to be a complex way of "discovering" the wishes of consumers, but we must note that these techniques represent the future of marketing. Some authors (Ariely, Berns, 2010) indicate that the ability to detect consumers' decisions much more complex and involves many factors that can affect brain activity (Ariely, Berns, 2010). However, through these methods it is possible to determine the parts of the brain that are more engaged than others when it comes to making a purchase decision. Neuromarketing is an interesting combination of marketing and science and is a window into the human mind, that is, we can say that neuromarketing key to what we call our buyology, unconscious thoughts, feelings and desires that govern our everyday decisions related to the purchase (Gill, Singh, 2022). The point is that our brain is constantly busy collecting and selecting information. Eventually, some data will be remembered, but most will remain an ordinary insignificant surplus that will be obliterated by oblivion (Ćosić, 2016). This process is unconscious and instantaneous, but it takes place every second, every minute, every day. An organization called Commercial alert, which filed a petition with the US Congress to ban neuromarketing, claims that brain scanning serves to console consciousness and is used for commercial profit (Wahbeh et al. 2022). Like any innovative use of technology, neuromarketing carries the possibility of abuse, and with it, moral responsibility. It is simply an instrument that helps us to clarify what we, as consumers, think of in a situation when we are confronted with a product or brand - and sometimes even helps us to discover the hidden methods that marketing experts use to seduce and deceive us without our conscious knowledge (Gill, Singh, 2020: 103-108). The more companies know about our unconscious wants and needs, the more useful and meaningful products will be marketed. Neuromarketing does not provide answers to all questions. As a young science, it is limited by our still incomplete understanding (Fortunato et al. 2014: 201-220). However, the good news is that the understanding of the way our unconscious influence on our behavior is progressing: today some of the best researchers around the world are grabbing big steps deeper into this amazing branch of science. Neuromarketing research illustrates how consumers perceive the message that they indicate to the company through its advertising. The brain is responsible for making consumer decisions. Research has shown that the brain uses as much as 20% of the total energy of man (Morin, 2011).

People use consciously only 20% of their brain. Most of our attention is not controlled, because the brain also focuses on potential threats. The man is most often under the control of the earliest part of the brain of the so-called reptilian brain. The reptilian brain does not understand the complex message and strives to avoid painful situations (Nauman et al, 2015).. This part of the brain can process visual stimulation without a visual cortex (Gammon, 2020). This is precisely why we see the first pictures, but their meaning. Famous neurologist Antonio Damasio once said that people are machines that do not think about feelings but feel like machines. A well-known neurologist has proven that the brain has been dependent on instinctive responses for millions of years. For neuromarketing, this means there are specific principles that should apply to advertising messages to optimize the processing of information at the level of our brain (Morin, 2011). The amount of data that a person receives daily is large for their brain and is about 10,000 messages per day. Consumers cannot clearly understand the messages produced by the manufacturer because of overfilling advertisements. In some neuromarketing campaigns there is a great desire to prevent the risks that the consumption of certain products bring (for example, cigarettes, alcohol, and others). According to WARC Ascential company (delivers specialist information, analytics and ecommerce optimization platforms to the world's leading consumer brands and their ecosystems) - influencers can generate a significantly stronger emotional response and higher levels of memory encoding than TV ads (Fortunato et al. 2014), according to research seeking to move the measurement of influencer marketing effectiveness beyond reach and engagement metrics (Weinlich, Semerádová, 2022). Whalar, an influencer marketing agency, teamed up with Neuro-Insight to test whether influencers evoke intense emotions and create lasting memories in a study that involved three cells of 60 respondents: followers of micro influencers (10k to 100k followers), followers of macro influencers (100k to 500k followers) and followers of celebrities. Respondents carried out a series of tasks as normal – watching TV (Rigby et al. 2017), YouTube videos and browsing their own Facebook feed – during which they were shown a series of ads that formed part of brand campaigns while brand activity was measured. And comparing key metrics across the formats revealed that study participants reacted far more strongly to influencer ads than TV ads (Saternus et al. 2022): the former generated 277% more emotional intensity and 87% more memory encoding (which correlates to future action and decision making). The study also highlights an influencer priming effect. Users tend to be put off by the interruption of TV, Facebook, and YouTube ads (Jarrar, 2020), but if they have seen an influencer post from the same campaign beforehand, they are more ready to watch the TV ad and not dismiss it out of hand. The research was conducted by using the eye tracker model Gazepoint GP3HD, with a 150 Hz sampling rate, and a GSR model Gazepoint Biometrics, integrated for data collection in Gazepoint Analysis UX Edition software, v.5.3.0. Statistical analysis of the data was performed using SPSS software, v.25. The subjects were exposed to 8 random stimuli from the Spanish influencers @manurios (4.5 million followers on 22 July 2019), and @paulagonu (1.9 million followers on 22 July 2019), which were interspersed with other comparable stimuli regarding beauty, fashion, and travel (Mañas-Viniegra et al., 2020: 3). Each stimulus had a maximum time limit of 5 s –with 3 s of separation between stimuli – in order to prioritize the areas of interest that captured the most attention and emotion, bearing in mind that young audiences have the highest level of skill in quickly focusing their attention on the information in a stimulus that is relevant and of interest to them (Añaños-Carrasco, 2015) (Mañas-Viniegra et al., 2020:3). Four stimuli were selected for each influencer, with the stimuli being similar to each other in displaying comparable situations and lifestyles. Areas of interests were defined (Figure 1) that reflected the action prescribed by influencers in terms of body image, brands, and differences when presenting similar situations and lifestyles between male and female influencers (Mañas-Viniegra et al., 2020).

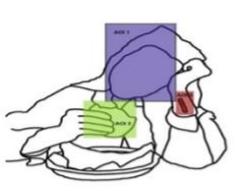
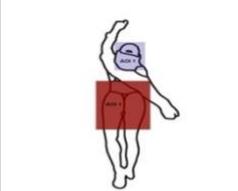
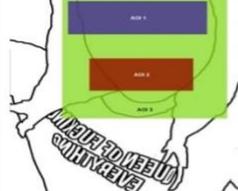
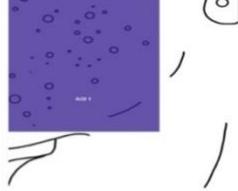
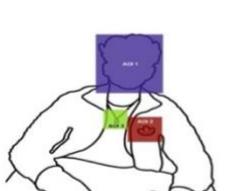
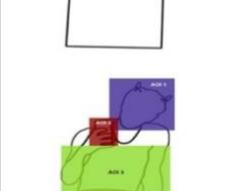
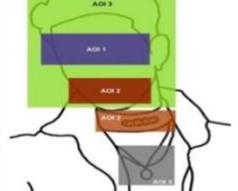
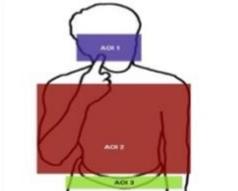
 <p>Real image available at:  <a href="https://www.instagram.com/p/BxalgKLhxUR/?utm_source=ig_web_copy_link">https://www.instagram.com/p/BxalgKLhxUR/?utm_source=ig_web_copy_link</a></p>	 <p>Real image available at:  <a href="https://www.instagram.com/p/BvcedeOIHg-H/?utm_source=ig_web_copy_link">https://www.instagram.com/p/BvcedeOIHg-H/?utm_source=ig_web_copy_link</a></p>	 <p>Real image available at:  <a href="https://www.instagram.com/p/BuZjaSJn5-R/?utm_source=ig_web_copy_link">https://www.instagram.com/p/BuZjaSJn5-R/?utm_source=ig_web_copy_link</a></p>	 <p>Real image available at:  <a href="https://www.instagram.com/p/BsWEW_Dnhjx/?utm_source=ig_web_copy_link">https://www.instagram.com/p/BsWEW_Dnhjx/?utm_source=ig_web_copy_link</a></p>
<p>(a) Stimulus 1 (E1): Face (AOI 1), Tattoo (AOI 2), Hamburger (AOI 3).</p>	<p>(b) Stimulus 2 (E2): Face (AOI 1), Buttocks (AOI 2).</p>	<p>(c) Stimulus 3 (E3): Eyes (AOI 1), Lips (AOI 2), Face (AOI 3).</p>	<p>(d) Stimulus 4 (E4): Acne (AOI 1).</p>
 <p>Real image available at:  <a href="https://www.instagram.com/p/BqkkozYGhaOT/?utm_source=ig_web_copy_link">https://www.instagram.com/p/BqkkozYGhaOT/?utm_source=ig_web_copy_link</a></p>	 <p>Real image available at:  <a href="https://www.instagram.com/p/BtT0vR2gmfA/?utm_source=ig_web_copy_link">https://www.instagram.com/p/BtT0vR2gmfA/?utm_source=ig_web_copy_link</a></p>	 <p>Real image not available</p>	 <p>Real image not available</p>
<p>(e) Stimulus 5 (E5): Face (AOI 1), Adidas (AOI 2), Necklace (AOI 3).</p>	<p>(f) Stimulus 6 (E6): Face (AOI 1), iPhone (AOI 2), Body (AOI 3).</p>	<p>(g) Stimulus 7 (E7): Eyes (AOI 1), Lips (AOI 2), Face (AOI 3), Adidas (AOI 4), Necklace (AOI 5).</p>	<p>(h) Stimulus 8 (E8): Dark under eye circles (AOI 1), Face (AOI 3), Adidas (AOI 4), Calvin Klein (AOI 5).</p>

Figure 1: Areas of interest (AOIs) of the stimuli. Source: created using @paulagonu and @manurios. (Mañas-Viniegra et al., 2020).

## 5. CONCLUSION

Neuromarketing research is becoming an increasingly common part of the marketing teams of companies and marketing agencies. In this way, companies are trying to show consumers that in fact their preferences are the most important thing in selling products. This study made an analysis of the influence of two-step flow theory supported by neuromarketing methods on consumers perception. As seen, it is now a fundamental branch of neuroeconomics for understanding consumer perceptions. For that, some techniques are used to study what happens in the brain of the human being. Neuroscience has found that photographs published by others with many likes, as occurs in the publications of influencers, are those preferred by the audience (Sherman et al., 2016). People can be also affected by influencers in the purchasing process of a product or service. Findings from this study show that influencers are individuals who direct the purchasing decisions of their followers through their online actions. Neuromarketing reveals additional information about customers and how they make purchasing decisions that cannot otherwise be obtained through traditional research techniques. The study shows that there is a unique insight into the unconscious and imperceptible reactions that arise in the brain as a result, and that in many cases they are reflected in different areas of the body. In order to find out what are the unconscious reactions of consumers which come as a result of exposure to content produced by influencers, with the help of neuromarketing methods and techniques, it can be monitored physiological changes and conclude what emotions are caused by those changes. The obtained results reveal how these reactions influence the behavior of customers and their purchasing decisions. As limitations in this field, the most prominent element in the first place is violation of customer privacy and manipulation of their decisions. Research that uses neuromarketing could have a harmful impact on consumer privacy and raise ethical concerns, as it was already previously researched by Stanton, Sinnott-Armstrong and Huettel (2016). This means that consumers exposed to neuromarketing techniques cannot hide their preferences, and that the companies can “read” their thoughts. In addition to these arguments, companies are trying to “convince” the environment that this kind of marketing activity is equally effective for both company and consumers, which questions the ethical side of the buying process

(Stanton, Sinnott-Armstrong and Huettel, 2016). Some authors also highlight the fact that human dignity also has to be the ground for discussion of ethical issues connected to neuromarketing (Ulman, Cakar, Yildiz, 2015). As future research, the ethical side of neuromarketing research but also all other neuromarketing techniques and their ethical sides should be investigated. Also, besides focusing on mega, and macro influencers, which were mainly the subject of marketing research in general (Mañas-Viniegra et al., 2020) micro and nano influencers impact on consumers' buying decisions by conducting empirical research should be carried out as more research are focused on influencers with lesser numbers of followers (Wibawa et al. 2021). In order to discover the full potential of these techniques, it is necessary to explore if there is any considerable influence of micro and nano influencers in regard to buying preferences with the use of neuromarketing methods. Neuromarketing brings a completely new methodology, a new concept of thinking and a change in the way of understanding not only marketing and business, but communication in general.

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# EXPLORING THE CUSTOMER SATISFACTION OF END USERS OF BANKING SERVICES IN MONTENEGRO, FOCUSING ON USERS OF ONLINE BANKING SERVICES

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## ABSTRACT

*The tendency to achieve the highest attainable levels of customer satisfaction is simultaneously the starting point and the goal of both marketing as a concept and the overall business and marketing activities of enterprises. This approach is confirmed by numerous studies, which showed that customer satisfaction leads to customer loyalty, which has a positive impact on the success of a business. Exceptional customer satisfaction, especially emotional satisfaction is reflected both in repeated purchases and positive word of mouth, which also significantly contributes to the success of the product or service. Because of this, marketing and management theory and practice dedicate particular attention to the concepts of customer satisfaction, and especially to its continued measurement and analysis. This paper aims to empirically determine the level of overall satisfaction of end users of banking services in Montenegro and test whether final consumers of online banking services achieve higher levels of satisfaction compared to those clients who use banking services solely in the 'traditional' way, i.e. through direct contact with bank tellers and employees. An online survey was conducted on a sample of 533 users. The level of satisfaction was measured through an individual assessment of satisfaction with the banking service. The results show that in Montenegro, there are slight differences in customer satisfaction identified as a somewhat higher degree of satisfaction found among users of online banking services, while the degree and direction of influence differ between individual banks. Statistical testing was conducted to assess the mentioned differences. This paper highlights the importance of properly understanding and managing customer satisfaction. Obtained results have significant implications, especially for the management of individual banks, and at the same time open up space for a deeper analysis of this issue.*

**Keywords:** *Customer satisfaction, Online banking services, Bank marketing perspective*

## 1. INTRODUCTION

During the last few decades the service sector has enjoyed significant growth and has become a feature of the economies of a large number of countries, among which is Montenegro. At the same time, many markets, among which is the financial services market, have faced changes imposed by the digital age. This has had major consequences, leading to an increase in the level of competition, and thereby the need to constantly track changes and to acclimatise to new technologies, new ways of doing business and ever greater demands and expectations from customers.

All this is leading the management of companies to place customer satisfaction at the centre of their way of doing business with the aim of improving their competitive position. Focusing on creating customer satisfaction requires continuous research and analysis into this, which is becoming an important precondition of successful business. This is particularly significant for the banking sector, in which customer satisfaction and trust are a necessary element of business success. In the last four years, the banking system in Montenegro has experienced significant changes. Namely, after two banks went into bankruptcy in 2019, in the following period the overall number of banks in Montenegro was reduced by another two banks, when two of the existing banks acquired one small and one large bank. Today the banking system in Montenegro is made up of eleven banks and is characterised by a relatively high degree of competition in a relatively small market. For this reason, fighting for every single customer has remained an imperative of how banks do business. Since success, in that sense, is, above all, conditioned by customer satisfaction, this research is actually directed towards analysing the satisfaction of end users with the service they have received. We consider this research, and similar ones, very significant, particularly in light of the fact that the conclusion is still valid that in the business practices of banks in Montenegro there is significant room for improvement and advancement of research into customer satisfaction (*Jovović et al.*, 2017).

## **2. LITERATURE OVERVIEW AND RESEARCH METHODOLOGY**

Customer satisfaction with banking services represents the assessment of customers as to whether what they have received from the bank fulfils their expectations. If the overall response of the customer, which in this case comes out of their use of banking services, is positive, then we can say that customer satisfaction has been achieved (*Oliver*, 1981). The literature is more than plentiful in examples which confirm that customer satisfaction is a prerequisite of loyalty (*Femić Radosavović & Jovović*, 2017). Namely, customer satisfaction, as a rule, is also reflected in the behaviour customers show in their subsequent purchases by way of repeating a purchase which has caused them satisfaction, while if it has caused them dissatisfaction it can be expected that a number of customers will change their provider. One research work (*Ziethaml & Bitner*, 2003) points to a direct positive relationship between the degree of satisfaction and the loyalty of the consumer of the service, stating that, just as an increase in satisfaction leads to repeat purchases and a rise in loyalty, the appearance of dissatisfaction and a growth in it lead the customer to change their provider, which means a loss of a client for the company, and thereby a reduction of loyalty. Similarly, other research works on this topic have shown that ‘delighted’ (that is, ‘extremely satisfied’) customers display a much higher probability of remaining loyal to the company in comparison to customers that are merely ‘satisfied’ (*Lam et al.*, 2004; *Oliver*, 1997). Numerous methods of measuring customer satisfaction exist, among which two are widely used: transaction-specific satisfaction, and overall satisfaction (*Lam et al.*, 2004; *Tian*, 1998; *Yang et al.*, 2004). The transaction-specific approach explains satisfaction as the psychological benefit for a customer after the specific use of a product or service. In this way, measuring transaction-specific satisfaction can provide specific diagnostic information on the provision of a product (*Lam et al.*, 2004). Compared to transaction-specific satisfaction, cumulative – or overall – satisfaction shows the customer’s cumulative impressions and attitude towards a certain brand or service performance (*Tian*, 1998; *Yang & Peterson*, 2004). Overall satisfaction is considered to be a more fundamental indicator of a product or service performance (*Bitner & Hubbert*, 1994; *Gustafsson et al.*, 2005; *Lam et al.*, 2004). Given that an ever larger number of customers of banking services in Montenegro use online banking services, we considered that it was necessary to look at clients’ satisfaction in relation to whether they use online services or not.

On the basis of the aforementioned, the research whose results we are presenting in this article is directed towards obtaining answers to the following research questions:

- 1) To what extent do the end users of the banking sector in Montenegro use online banking services?
- 2) What is the degree of satisfaction of end users of banking services in Montenegro when considered in relation to whether they use online banking services or not?
- 3) Is there a statistically significant difference in the degree of satisfaction between users who use services exclusively in a traditional/classic way and those who also use the bank's online services?

The answers to the above questions are shown for the four largest banks in Montenegro, as well as for the banking sector as a whole. Following the presented theoretical framework, we decided to use the cumulative or overall satisfaction approach in measuring customer satisfaction for the purpose of the research that we conducted. Customer satisfaction is measured by a survey method, using a structured questionnaire which was distributed and filled in online. In the research 559 individuals took part, of whom 533 use banking services in Montenegro. As has been stated, satisfaction is measured by a single score for the overall satisfaction in the banks services. Namely, the respondents had the opportunity, using a five-point Likert scale (where 1 means completely dissatisfied, 2 means mostly dissatisfied, 3 means neither dissatisfied nor satisfied – neutral, 4 means mostly satisfied, and 5 means completely satisfied), to express the degree of their satisfaction.

### 3. RESEARCH RESULTS

#### 3.1. Degree of use of online banking services

The results of the research have shown that, besides the traditional way of carrying out banking services – through visiting the bank and direct contact with bank employees – online services are, on average, used by slightly fewer than half (46.9%) of the clients of banks in Montenegro, as shown in Table 1.

End users of banking services:	%
Use online banking	46.9
Do not use online banking	53.1

*Table 1: Degree of use of online banking services in Montenegro*

Besides this, the obtained results show that the degree of use of online services significantly differs between individual banks, which is shown in Table 2, in which the structure of the clients of the four largest banks in Montenegro, regarding whether they use online banking is shown.

Banks	Use online banking	Do not use online banking
A	52.74%	47.26%
B	54.55%	45.45%
C	42.68%	57.32%
D	38.67%	61.33%
Average all banks	46,9%	53,1%

*Table 2: Structure of the end users of banking services from the aspect of use of the online services in the four largest banks in Montenegro*

Data shows that in two of the banks the number of users of online services is more than half of their total clients, while in the other two banks the situation is the opposite – less than half.

The identified differences are, in our opinion, a consequence of the different communicational approaches in individual banks, so the conclusion – that in the two banks with a lower number of online users there is room for improving the existing practice – is imposed by itself.

### 3.2. Degree of overall satisfaction of consumers of banking services in Montenegro

The results of the research of the degree of overall satisfaction of users of banking services in Montenegro, illustrated through percentage of users giving each score on a scale of 1 to 5, as well as the average overall satisfaction score for all banks in Montenegro, are given in Table 3.

End users of banking services in Montenegro Satisfaction					
Percentage					Average score
1- completely dissatisfied	2- mostly dissatisfied	3 - neutral	4 - mostly satisfied	5 - completely satisfied	Overall satisfaction
2.25%	5.82%	18.95%	42.78%	30.21%	3.929

*Table 3: Degree of overall satisfaction of end users of banking services in Montenegro, shown as a percentage of customers by level of satisfaction and average score (1 to 5)*

On the basis of the data from Table 3 it can be concluded that the end users of banking services in Montenegro show a relatively high level of satisfaction, which is testified to in the average score of the degree of overall satisfaction (3.929), as well as by the fact that almost a third of customers (30.21%) are completely satisfied, while more than 70% of them are mostly satisfied or completely satisfied. On the other hand, in all, slightly more than 8% of customers, from the aspect of the level of satisfaction fall into the category of mostly dissatisfied or completely dissatisfied. In Table 4, data on customer average overall satisfaction is shown for each of the four largest banks in Montenegro.

Banks	Overall Satisfaction Score (average)
A	3.555
B	4.155
C	4.073
D	4.173
Average all banks	3,929

*Table 4: Degree of overall satisfaction of end users of the four largest banks in Montenegro, shown as the average score (1 to 5)*

On the basis of the data from Table 4, a difference in the degree of satisfaction of end users can be ascertained between the largest banks in the system. Namely, on one side are three of the four largest banks, in which the degree of customer satisfaction is similar, above-average and higher than 4; while on the other side is one bank, in which it can be noticed that the average degree of overall satisfaction with the service is lower than 4 and lower than the average for all banks. This piece of data about this bank's lower degree of customer satisfaction compared to the customers of their main competitors is certainly a consequence of problems the bank has in its relations towards its customers. This represents a particular problem where their direct competitors enjoy a relatively high level of customer satisfaction, and sends a strong message to the management of this Bank, that the change in Customer relationship management is urgently needed.

### 3.3. Degree of overall satisfaction of end users of banking services in Montenegro depending on whether they use online services

If we link the data about the structure of clients from the aspect of the use of online services with the level of customer satisfaction, at the level of the entire system (Table 5) we see that the difference in satisfaction between these two categories of clients is very small.

End users of banking services:	%	Overall Satisfaction Score (average)
Use online banking	53.1%	3,948
Do not use online banking	46.9%	3,912
All clients	100.0%	3.929

*Table 5: Degree of overall satisfaction with the offered banking services for online and other users*

For a deeper analysis of the possible differences in the degree of satisfaction between customers who use online services and those who do not, we have shown the data from the research all together in Table 6, in which this data is shown individually for the four largest banks, as well as for the entire banking system.

Banks	End users use online services		End users do not use online services		All clients Satisfaction
	%	Satisfaction	%	Satisfaction	
A	52.7%	3.597	47.3%	3.507	3.555
B	54.5%	4.117	45.5%	4.200	4.155
C	42.7%	4.143	57.3%	4.021	4.073
D	38.7%	4.276	61.3%	4.109	4.173
All banks	46.9%	3.948	53.1%	3.912	3.929

*Table 6: Degree of overall satisfaction with the offered banking services for online and other users for four largest banks in Montenegro*

The differences in the degree of customer satisfaction between clients who use online services and those who do not, when considered at the level of individual banks is very small. However, in order to confirm our opinion about these very small differences statistically, we first examined, at the level of the banking system, whether there is a statistically significant difference between the levels of customers satisfaction depending on whether they use online banking or not. To that end, we used the *t*-value statistic. The results of the *t*-test show that no level of quantitative correlation between the variables is confirmed. Namely, a correlation of  $-0.018$  is close to zero, on the basis of which we can conclude that, at the level of all the banks in Montenegro, there is no statistically significant difference in the degree of satisfaction of their end users, regardless of whether they use online services or not. With this, in order to examine whether there exist statistically significant differences in the degree of customer satisfaction between individual banks depending on whether they use online services or not, a Kruskal-Wallis nonparametric test is used. For this, four subsamples were created, made up of the users of certain banks (banks A, B, C and D). The results of this test are shown in Table 7.

Kruskal-Wallis H	.015
df	1
Asymp. Sig.	.902

*Table 7: Analysis of the differences in the structure of responses of clients who use/do not use online banking services compared to the degree of their satisfaction with the banks' services, applying the Kruskal-Wallis test*

On the basis of the results of the Kruskal-Wallis test, the conclusion can be made that: not even among the end users of the four largest banks in Montenegro is there any statistically significant difference in the degree of satisfaction with banking services for clients who use online banking compared to who do not use these banking services. In other words, there does not exist any statistically significant difference in terms of the level of satisfaction of the users of online banking services compared to those who use banking services exclusively in the traditional way. At the same time, this also shows that the differences in the degree of customer satisfaction which exist between banks are a consequence of satisfaction with the services and the value which they get from the bank, independent of whether they use or do not use the online banking, therefore the bank with the largest number of dissatisfied customers should urgently identify and address the causes of this dissatisfaction. We consider that the conclusion – that there is no statistically significant difference regarding the level of satisfaction of the users of online banking services compared to those who use banking services exclusively in a traditional way – should not be interpreted in such a way whereby the provision of online banking services does not influence customer satisfaction. Customers today assume that they will get this service from banks, so eventual non-existence of such a service, especially in the case of customers who have got used to it, would lead to their increased dissatisfaction and the probable changing of their bank to one that offers such a service.

#### **4. CONCLUSION**

The research carried out on a sample of 533 end users of banking services in Montenegro has shown that slightly fewer than half (46.9%) of the clients of banks in Montenegro use online services. According to this research, the degree of use of online services is significantly different in individual banks, so the proportion of users of online services out of the overall number of clients of the four largest banks ranges from 39% in the bank with the least online users, to 55% in the one which has the most. The differences are, in our opinion, the consequence of different communicational approaches in individual banks. The end users of banking services in Montenegro show a relatively high level of satisfaction (the average satisfaction score on a scale of 1 to 5 is 3.929). This opinion is also confirmed by the fact that more than 70% of customers are mostly satisfied or completely satisfied with the service that the banks in Montenegro provide them. On the other hand, slightly more than 8% of customers, from the aspect of the level of satisfaction, fall into the category of mostly dissatisfied or completely dissatisfied. According to this, a difference in the degree of satisfaction of end users has been identified between individual banks (3.555 being the lowest score, to 4.173 in the one where customers are most satisfied). This item of data regarding a lower degree of customer satisfaction compared to the customers of their main competitors is certainly a consequence of the problem the bank has regarding its customers, which represents a particular problem in the situation of the relatively high level of satisfaction that their direct competitors enjoy. Finally, the research has shown that, both at the level of the banking system and at the level of individual banks, there is no statistically significant difference in the degree of satisfaction between clients who use online services and those who use banking services exclusively in a traditional (offline) way.

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## TRENDS IN BUSINESS FRAUDS: CASE OF CROATIA

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### **ABSTRACT**

*Business frauds and losses caused by fraud led to corporate scandals and the collapse of some of the world's largest corporations such as Enron and Satyam, and focused public attention on the problem of frauds and fraudulent financial reporting. The Association of Certified Fraud Examiners has been conducting global fraud research for years in order to familiarize the public with the main characteristics of business frauds and raise the level of fraud awareness. A comprehensive survey on fraud in the Republic of Croatia was conducted for the first time in 2021, and included 124 respondents from 16 different industrial sectors. The research related to frauds that occurred during 2021 and 2020, i.e. it covered the two years affected by the COVID-19 crisis. The research was conducted by the Association of Certified Fraud Examiners Croatia. This paper presents some of the main results of the research and provides a comparative presentation and analysis of trends in the Republic of Croatia with global trends in business frauds. According to the results presented by ACFE Croatia, total financial losses caused by business frauds amount to about HRK 165 million. Furthermore, according to estimates, about 13% of total annual income was lost due to fraud. The characteristics of frauds in the Republic of Croatia do not differ significantly from frauds on the global level, but certain specificities have been observed. The aim of this paper is to point out the basic characteristics and determinants of business frauds in the Republic of Croatia, to compare trends in the Republic of Croatia with the results of research at the global level, and to highlight the importance of anti-fraud controls and raising awareness about fraud at all levels of society.*

**Keywords:** *business frauds, fraud detection, fraud prevention, anti-fraud controls*

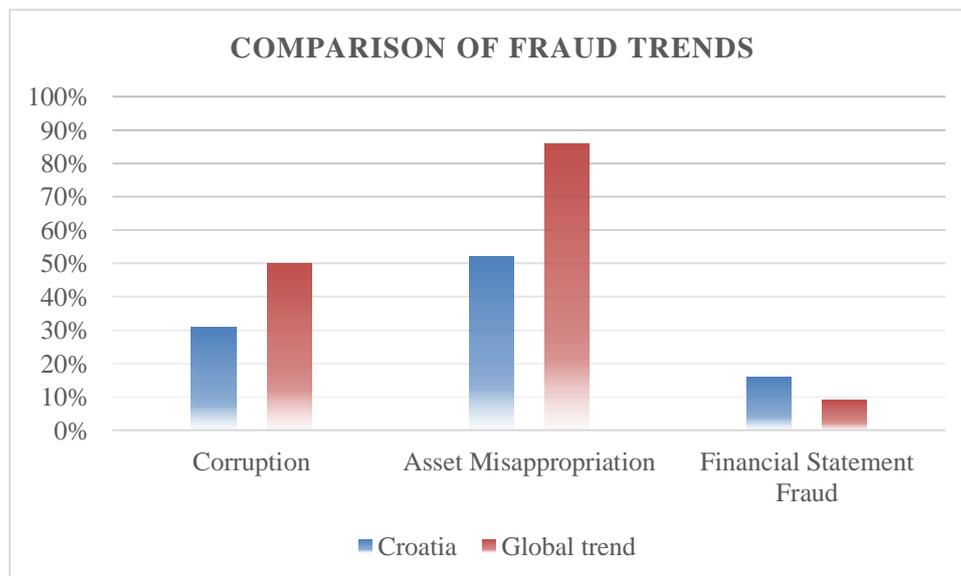
### **1. INTRODUCTION**

Business frauds present a global problem and practice has shown that no organization is immune and protected from various forms of business frauds. Major corporate scandals such as Enron, World-Com, Satyam and others have shaken investor confidence, put the accounting and auditing professions under a spotlight and highlighted the problem of fraud and fraudulent financial reporting. Enron and World-com are not isolated cases, and a whole series of corporate scandals have pointed to the unethical behavior of management, poor functioning of internal controls, and the failure of auditors to detect fraud in financial statements. All these events put the focus of the public, investors and regulators on analyzing fraud and developing mechanisms that will detect fraud in a timely manner as well as those that will act preventively and reduce the possibility of fraud to a minimum level.

In this sense, the Association of Certified Fraud Examiners (further on: ACFE) has been conducting research on business frauds for years, since 1996. Their annual reports on business frauds indicate trends in frauds, characteristics of perpetrators, effectiveness of supervisory mechanisms, etc. According to estimates, the average corporation annually loses about 5% of its revenue from various forms of fraud, i.e. fraud costs companies about 4.7 trillion dollars annually (ACFE, 2022, 8) and it should be emphasized that these are only estimated losses and that many frauds remain undetected. Fleming et al. point out that fraud, in addition to the financial cost for the company, generates losses for employees, customers and suppliers and society as a whole (Fleming et al, 2016, in Bekiaris & Papachristou, 2017, 467). Amiram et al. point out that "financial reporting fraud and other forms of financial reporting misconduct are a significant threat to the existence and efficiency of capital markets" (Amiram et al, 2018, 2). ACFE points out that "business fraud is probably the most expensive and most common form of financial crime in the world" (ACFE, 2022, 6), and business fraud itself is defined as "frauds that are committed by individuals against the organizations that employ them" (ACFE, 2022, 6). The turbulent business environment in which companies operate provides fertile ground for all kinds of misconduct, and companies are exposed to an increased risk of fraud. It is interesting to point out that according to the research conducted by ACFE and Grant Thornton on the impact of the COVID-19 pandemic on fraud and fraudulent reporting, as many as 71% of respondents believe that the level of fraud will increase in the future period as a result of the pandemic (ACFE, 2021, 4). Karpoff (2020) also states that the risk of business fraud is increased in the upcoming period as a result of the pandemic, and the current energy and economic crisis certainly further increases the risk of business fraud and the exposure of companies to business frauds. Soltani points out that "corporate fraud goes on at a deeper level within the company and the environment in which it operates" (Soltani, 2014, 252). Grandstaff & Solsma (2021, 421) point out that frauds last longer and longer, cause greater losses, and the number of listed companies involved in frauds increases over time. All of the above indicates the need for a stronger fight against fraud, but also the need to raise awareness about fraud and the losses it causes. The first line in the fight against frauds is represented by the system of internal controls. Rahim et al. state that a strong and well-designed system of internal controls increases business efficiency and compliance with laws, rules, policies and procedures (Rahim et al, 2017). On the other hand, weaknesses and deficiencies in the system of internal controls can contribute to committing fraud in the company. KPMG in conducted research also points out that weak internal controls encourage fraud and that empirical results show that anti-fraud controls in companies are not sufficiently developed (KPMG, 2016, 6). The Association of Certified Fraud Examiners Croatia (further on: ACFE Croatia) conducted the first comprehensive survey on frauds in the Republic of Croatia in 2021, and the sample included 124 respondents, i.e. companies in which fraud occurred during 2021 and 2020. In this work, the authors use the data collected by ACFE Croatia and the results presented within the report "How we steal? Research on Business Frauds in the Republic of Croatia". The aim of the paper is to conduct a comparative analysis of fraud trends and to compare the main characteristics of frauds in the Republic of Croatia with global trends. Within the framework of this work, special emphasis is on the analysis of controls aimed at preventing fraud. Namely, the research results show that in Croatian companies there is significant space for progress and improvement of control mechanisms in order to prevent and detect fraud in a timely manner. The paper consists of 4 chapters. After the introductory part of the paper, the second chapter presents the main features of business frauds in the Republic of Croatia and compares the results with global trends in fraud. In the third chapter, control mechanisms for fraud prevention are presented and compared, while the last, fourth part of the paper brings concluding considerations.

## 2. COMPARISON OF FRAUD TRENDS IN THE REPUBLIC OF CROATIA WITH GLOBAL TRENDS

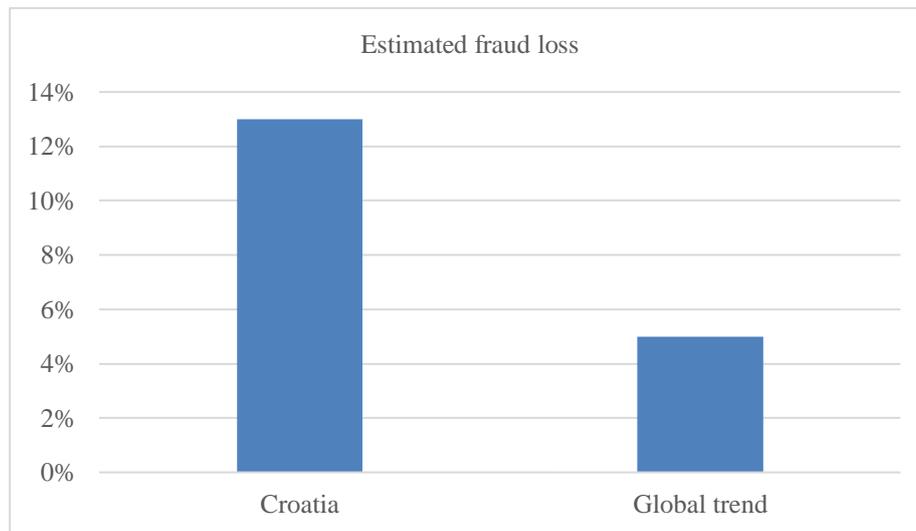
A comprehensive survey on frauds in the Republic of Croatia was conducted for the first time by ACFE Croatia in 2021. The survey included 124 respondents, i.e. companies from 16 different industrial sectors. The research related to frauds that occurred during 2021 and 2020, and the results of the conducted research are presented in the framework of report "How we steal? Research on Business Frauds in the Republic of Croatia" (ACFE Croatia, 2022). In this part of the work, the main results of research on business frauds in Croatia are presented and compared with global trends. Business frauds are usually classified into three basic categories: corruption, misappropriation of assets, and financial statement fraud (ACFE, 2022, 10). According to business fraud research that ACFE has been conducting for years, these three forms of business frauds dominate, although in recent years, trends towards digitization and, consequently, computer frauds have been observed. Misappropriation of assets, which includes the theft of money or other property (most often inventory and office supplies) from the employer, is the most common form of business frauds and is present in 86% of cases globally, while it is represented in 52% of fraud cases in Croatia. Corruption as the second most represented form of frauds was detected in 50% of fraud cases at the global level, and according to the Croatian results, corruption was present in 31% of fraud cases.



*Figure 1: Comparative overview of the most common forms of business fraud (Source: Editing by the author according to: ACFE 2022, ACFE Croatia 2022.)*

On a global level, financial statement frauds involving overestimating or underestimating of net worth and profit are represented in 9% of cases, while in Croatia this type of fraud is represented in 16% of cases. It should certainly be pointed out that in this sense we are not following world trends, because the third most common form of fraud in the Croatian sample is cybercrime, i.e. computer fraud. This form of frauds was detected in 22% of cases, and the most common form of computer fraud is phishing. This type of computer crime was detected in 65% of fraud cases, and this form of fraud refers to "a type of social engineering in which the perpetrator sends fake messages that are almost identical to those of legitimate services" (ACFE Croatia, 2022, 11). The perpetrator's intention is to reveal the user's confidential data, which is then misused in various ways. When the estimated fraud losses are analyzed, there is a difference in trends in Croatia compared to the global average. Namely, for years ACFE has stated in its reports that it is estimated that the average corporation annually loses around 5% of its revenue due to

various forms of fraud. In Croatia, these estimates are at a slightly higher level - it is assumed that as much as 13% of revenue is lost as a result of various fraudulent activities (ACFE Croatia, 2022, 5).



*Figure 2: Estimated losses from business frauds  
 (Source: Editing by the author according to: ACFE 2022, ACFE Croatia 2022.)*

In the Croatian sample, the largest number of companies that are victims of frauds come from the private sector (limited liability company or a privately owned joint stock company) - about 74% of them, while the rest of the companies belong to the public sector (25%), and a very small share (1%) is made up of organizations such as cooperatives and the like. In the global framework, private companies were victims of fraud in about 44% of cases, and public companies in 25% of cases. State-owned organizations were victims of fraud in about 18% of fraud cases. It is also interesting to point out the average duration of fraud, that is, the time that elapses from the commission of the fraud to its discovery. In the sample of Croatian companies that were victims of fraud, the average duration of fraud is 8 months, which is shorter than the global trend, according to which the duration of fraud is 12 months.

### 3. COMPARATIVE ANALYSIS OF CONTROL MECHANISMS FOR FRAUD DETECTION AND PREVENTION

At the global level, tips have been the dominant form of detection for years, and as many as 42% of all frauds are detected by tips. In Croatia, tips are also the most effective way to detect fraud, but they are represented in a smaller percentage (22%) compared to the global average.

	Croatia		Global trend	
	Detection method	%	Detection method	%
1	Tip	22%	Tip	42%
2	By accident	13%	Internal audit	16%
3	Document examination	13%	Management review	12%
4	Management review	9%	Document examination	6%
5	Automated transaction/data monitoring	7%	Account reconciliation	5%

*Table 1: The five most common methods of initial fraud detection  
 (Source: Adjusted according to ACFE 2022, ACFE Croatia 2022)*

It is interesting to point out that in Croatia as many as 13% of fraud cases were discovered by accident, while other fraud detection mechanisms refer to internal control mechanisms such as document review, managerial control mechanisms and monitoring of data and transactions. The main difference between the Croatian results and the global trends is the significantly lower share of tips than at the global level, but also the fact that only 6% of cases were discovered through internal audits, while at the global level this share amounts 16%. Also, although managerial control mechanisms are in fourth place in terms of fraud detection, it should be noted that only 9% of frauds were detected in this way, and that most of the surveyed organizations have not implemented this form of control at all. In this sense, there is a significant space for progress in the Republic of Croatia in the form of implementing basic control mechanisms for the prevention and detection of frauds. Proactive control mechanisms such as tips, reconciliation of accounts, document reviews, automatic monitoring of data and transactions, etc. are much more effective in fraud prevention and detection, and as a result, there is less loss from fraud. Exactly in this segment of business and improvement of internal control system companies should act more actively in order to reduce the possibility of committing business fraud to a minimum level. Within this research, the authors also analyzed whether there are differences in the detection of fraud depending on the form of company ownership. Namely, Fleming et al. (2016) point out that the losses from fraud in public companies are higher and it is expected that these frauds will in most cases be detected through formally designed control mechanisms rather than by accident. A total of 62 respondents answered the question related to the method of fraud detection, and the results of fraud detection depending on the form of ownership are shown in table 2. It is clear that tip is the most common form of fraud detection in both cases. It can be observed that more frauds are discovered accidentally in private than in state/public or local owned enterprises. Furthermore, it is interesting to point out that in state/public or local owned companies, in none of the cases managerial control mechanisms or automatic monitoring of data and transactions were highlighted as a form of fraud detection.

<b>Fraud detection method</b>	<b>Private ownership</b>	<b>State/public/local ownership</b>
1	10	5
2	7	2
3	6	2
4	6	0
5	5	0
6	12	7

*Table 2: Detection of fraud in relation to the form of ownership  
 (Source: Editing by the author)*

Fraud detection method:

- 1 - tip
- 2 - by accident
- 3 - document examination
- 4 - managerial control mechanisms
- 5 - automated transaction/data monitoring
- 6 - other forms of detection

A statistical analysis of the differences in the method of fraud detection depending on the form of ownership (private or state/public/local) was made using the Chi-square test. The results of the analysis showed that there is no statistically significant difference ( $\chi^2 = 5.542$ ,  $p\text{-value} = 0.3534$ ) in fraud detection with regard to the form of ownership.

In the context of the fight against fraud, various forms of internal controls specially designed and implemented to prevent fraud represent the first line of defense. Adopting a code of conduct, raising the level of fraud awareness through various employee educations, developing programs and policies for the prevention and detection of frauds are mechanisms that can contribute to the detection and prevention of frauds. At the global level, these mechanisms act as a cornerstone in the fight against frauds, because for example, as many as 82% of the companies that participated in the 2022 fraud survey had adopted a code of conduct. In this regard, companies in Croatia lag far behind global trends and, for example, only 33% of the companies in the Croatian sample had adopted a code of conduct. An overview of the most common control mechanisms detected in companies that were victims of fraud is shown in the following table.

No.	Type of anti-fraud control	Croatia (%)	Global (%)
1.	Management review	49%	69%
2.	Internal audit department	42%	77%
3.	External audit of financial statements	36%	82%
4.	Dedicated fraud department, function, or team	33%	48%
5.	Code of conduct	33%	82%
6.	Anti-fraud policy	27%	60%
7.	Fraud training for employees	25%	61%
8.	Proactive data monitoring/analysis	22%	45%
9.	Surprise audits	15%	42%
10.	Fraud training for managers/executives	13%	59%
11.	External audit of internal controls over financial reporting	11%	71%
12.	Formal fraud risk assessments	11%	46%
13.	Rewards for whistleblowers	9%	15%
14.	Hotline	7%	70%
15.	Job rotation/mandatory vacation	5%	25%
16.	Independent audit committee	5%	67%
17.	Management certification of financial statements	4%	74%
18.	Employee support programs	2%	56%

*Table 3: Anti-fraud controls  
 (Source: Adjusted according to ACFE Croatia 2022, 30.)*

From the data listed in Table 3, it is clear that Croatian companies lag behind global trends significantly in terms of the implementation of various controls for the prevention and detection of frauds. Management reviews were listed as the most prevalent form of anti-fraud control, and this form of control was implemented in only 49% of the companies in the sample. The internal audit department was established in 42% of cases, however, when analyzing the effectiveness of this form of control in fraud detection in the Republic of Croatia, it is observed that only 6% of frauds were detected by internal audit. Independent audit as a form of anti-fraud control was highlighted by 36% of respondents. In terms of external audit, it should be emphasized that the task of external audit is to assess the fairness and objectivity of the financial statements, not to detect fraud. In this sense, external auditors cannot be seen as the main actors in the fight against fraud. This is primarily the tasks and responsibility of internal forms of company supervision (primarily internal controls and internal audit). It should be noted that the fraud risk assessment procedure is adopted in only 11% of Croatian companies, while the global trend is around 46%. Fraud awareness programs are also significantly less prevalent compared to the global trend.

All of this indicates that all stakeholders in the anti-fraud chain should be more actively involved in raising awareness of the fraud issue and the challenges frauds pose, to which no organization is immune. In Croatian companies, there is certainly space for improvement of the internal control system and the introduction of controls aimed at the prevention and detection of fraud. It is necessary to continuously raise the level of awareness about fraud among the business community in order to improve the internal control system in terms of implementation of anti-fraud controls but also in terms of improving their efficiency. Namely, for an effective fight against fraud, the tone from the top and the environment in which controls are carried out are essential, because the integrity and behavior of key people in the company is a signal to all other employees. There is no doubt that in Croatian companies there is room for improvement of control mechanisms in the field of fraud prevention and detection, and the same can be observed from the following table.

No.	Fraud detection method	%	Type of anti-fraud control	
1	Tip	22%	Rewards for whistleblowers	9%
2	By accident	13%	Hotline	7%
3	Document examination	13%	Proactive data monitoring/analysis	22%
4	Management review	9%	Management review	49%
5	Automated transaction/data monitoring	7%		

*Table 4: Comparison of anti-fraud controls and fraud detection methods  
 (Source: Adjusted according to ACFE Croatia 2022, 30.)*

Table 4 shows a comparison of fraud detection methods and anti-fraud controls that existed in the company in the moment of fraud detection. The largest number of frauds was discovered by tip, and it should be noted how very few companies in the Republic of Croatia have controls related to this kind of fraud detection and prevention. Namely, only 9% of the respondents stated that there are certain rewards for whistleblowers, while the proportion (7%) of those who have an open line for reporting frauds is even smaller. It should be noted that in the global context, as many as 70% of companies declared that they have this form of anti-fraud control, which further confirms that there is a significant gap in the practice of Croatian companies in relation to world trends and the need for urgent action and the introduction of this form of anti-fraud control in Croatian companies. Based on these results, it is emphasized that "processes for collecting and thoroughly evaluating tips should be a priority for employees in charge of combating fraud" (ACFE Hrvatska, 2022, 16). Management reviews, as a form of anti-fraud controls, are represented in 49% of the companies in the sample, which makes them the most represented form of controls for combating fraud, and on the other hand, only 9% of committed frauds were detected by these controls. It is interesting to point out the factors that, according to the respondents involved in the research, contributed the most to the fraud to occur. Approximately 18% of respondents believe that the neglecting of existing internal controls is the main reason for committing fraud. When the lack of managerial control mechanisms is added (13% of cases) and the general lack of internal controls (9%), it can be concluded that the largest number of respondents pointed out the system of internal controls as the main opportunity for fraud. System of internal controls was not designed at all or was not designed in such a way that it could respond to fraud challenges and risks. Poor leadership or a poor environment and a poor tone from the top were highlighted as the main factors for committing fraud in 16% of cases, as well as a lack of employee education about fraud (ACFE, 2022, 33).

All of the above mentioned indicates that Croatian companies should work on the design of anti-fraud mechanisms, and the implementation of internal controls that will be able to respond to the challenges of fraud. Emphasizing the importance of ethical behavior, insisting on integrity, adopting a code of conduct, adopting a fraud prevention policy, anti-fraud training for employees and other forms of controls aimed at fraud prevention and detection represent the basics of anti-fraud behavior and the fight against fraud. All stakeholders involved in the anti-fraud chain should continuously work on promoting the importance of anti-fraud fight and raising fraud awareness so that ultimately companies could react proactively and raise their level of awareness and fight against fraud and the loss they bear.

#### **4. CONCLUSION**

In this paper, the authors present the main features of business frauds in the Republic of Croatia and compare Croatian experiences with global trends in fraud. The results of the research carried out by the Association of Certified Fraud Examiners in Croatia show that the total financial losses caused by business fraud on a sample of Croatian companies affected by the fraud amount to about HRK 165 million, and as a result of fraudulent activities, according to estimates, about 13% of the total annual revenue was lost. The characteristics of fraud in the Republic of Croatia do not differ significantly from fraud on a global level, but certain specificities have been observed. For example, as a specific feature of the research conducted in Croatia, the fact that the research showed that in more than 50% of damaged organizations there are no adequate control mechanisms at all, should be highlighted. Different control mechanisms present fraud detection and prevention measures, and are being imposed as an indispensable tool in the fight against fraud on a global level. Unfortunately, in the practice of Croatian companies and organizations included in the research, this form of fraud prevention and detection has proven to be insufficiently represented and ineffective. In this sense, in the fight against fraud and fraudulent behavior, it is necessary to continuously highlight the importance of various forms of internal supervision, the implementation of appropriate control mechanisms and their role in fraud risk management. This research contributes to a better understanding of the characteristics of business frauds in Croatia and points to the similarities and differences of business fraud in Croatia compared to global trends in fraud. It should certainly be pointed out that this work aims to contribute to raising awareness about fraud and developing a better dialogue at all levels of society regarding the detection and prevention of business frauds.

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## STUDY OF THE FUTURE ECONOMISTS' SKILLS FOR REALIZATION IN THE MODERN LABOUR MARKET

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### ABSTRACT

*Information and communication technologies, and digital technologies in particular, are an integral element of the digital economy. Digitalisation, in turn, is changing traditional practices and patterns of activity in all spheres of public life. In this context, digital literacy is becoming an absolute necessity for full participation in the modern economy and society. The aim of the present study is to collect information about the digital skills of students graduating in Economics. The self-assessment of their ability to work under conditions of digital transformation can serve to form guidelines for improving their digital literacy. This is of utmost importance given that digital skills are becoming increasingly necessary and in demand in a growing number of professions. This makes digital skills and competences a key factor for students' professional realization in the labour market. Related to this is the development of soft skills, which are becoming increasingly valuable in the context of process automation and the use of artificial intelligence. Given this, competition in the labour market will increasingly be based on soft skills. Identifying existing skills and matching them to changing labour market conditions is a starting point in shaping the right set of skills in demand in the digital economy. Possession of labour market relevant skills creates competitiveness in the employment search process. However, due to the rapid pace of development of new technologies, skills and competences need to be updated periodically. This puts forward the principle of lifelong learning, which includes qualification and retraining not only in educational institutions but also in the workplace.*

**Keywords:** *digital literacy, digital skills, soft skills, economics education*

### 1. INTRODUCTION

As a result of globalization and the transition from a manufacturing and technology-based economy to an information or knowledge-based economy, the skills needed in the workplace of the 21st century have radically changed (Dogara, Saud and Kamin, 2020). The development of technologies, the digital transformation of the economy, the change in the nature of work, the emergence of new professions and the growth of competition create a new reality in the labour market. These changes require new skills, which become critically important for the successful development of businesses and for maintaining the employment of staff. The modern world is changing rapidly, with increasing demand in all fields of employment. In order to be competitive, a graduate should possess not only good professional knowledge, but also have a number of extra skills, so-called "soft skills" (Kostikova, Holubnycha, Girich, & Movmyga, 2021).

Research on the digital transformation of the economy and its manifestations examines an extremely wide range of skills needed to work in the new environment. They are systematized from different points of view, with different goals and according to multiple criteria. The most common understanding is the division of skills into two large groups – hard skills and soft skills. Hard skills are professional skills specific to a given business field, profession, a particular company and even job position. They are usually acquired through formal education and work experience and are quantifiable. Digital skills; the command of foreign languages; specialized professional skills – technical, accounting, financial, commercial, legal, etc. are an example of hard skills. Universities are increasingly required to develop knowledge measured in terms of grades (hard skills) and inter-personal, social, and communication abilities (soft skills). (Betti, Biderbost, García Domonte 2022). The acquisition of solely technical skills in the graduates' fields was found to be inadequate for graduates to gain jobs and to be effective at work (Keller, Parker and Chan, 2011; L. Asmaak Shafie and S. Nayan, 2010). Soft skills are subjective skills based on people's personality characteristics and their ability to interact with other people. These are not knowledge and habits directly related to a specific professional activity. However, they contribute to the quick adaptation to new conditions and to effective communication with others. They are acquired during people's entire life and professional journey, are difficult to measure and have universal application. These may include: teamwork, creativity, emotional intelligence, empathy, proactivity, persuasiveness, time management, coping with work stress, etc. In today's competitive market, business owners seek employees equipped with strong soft skills. (Shehu, Miftari & Hajdari, 2021). The problem of the importance of soft skills development has been mentioned in research works of Durrani (2001), Hazlett (2017) and Succi (2015). Developing these transferable skills for undergraduate students is a problem examined by Skoda, Doulik, & Simonova (2018), more specifically for students of economic and managerial programs was analyzed by Jaafar (2018), Salama, & Ayub (2016), Schipper, & Stappen (2018), Takacs, & Horvath (2017). Methods and techniques of soft skills assessment are described in other studies (Corti, Brambilla, & Sancassani (2014), Lyz (2018). The problem of enhancing potential employees' soft skills (bachelor students, master students, doctoral and postdoctoral students) has been of particular interest to researchers such as Malykhin, Aristova, Kalinina, & Opaliuk (2021). In today's complex and dynamic environment, both types of skills are important for people and businesses, and the combination of these skills is increasingly sought after, which is a factor for quality performance of work tasks in a favorable environment, high productivity and positive final results. Digital skills are usually considered a type of hard skills, as they are related to the use of special technologies and electronic technical devices. However, they also incorporate characteristics of soft skills, insofar as they include logical thinking, creativity, communication abilities, etc. Therefore, digital skills can be broadly defined as skills to effectively use digital tools, systems and applications in work and leisure to search and manage information, create and share content, interact, collaborate, solve problems. Advanced digital technologies such as mobile communication, social media, cloud computing, massive data analysis, smart devices, connected objects and sensors, and the revolution brought about by the Internet of things (IoT), are changing work, recreational and private habits (European Schoolnet & DIGITALEUROPE, 2015:8). Thus, there is a need to provide people with new skills tailored to the impact of the technological innovation on the economic activity, which is manifested not only in the professional field but also in a generic sense (Álvarez-Flores, Núñez-Gómez, Rodríguez Crespo, 2017). The availability of skills, which cannot be fully reproduced by machines, and the desire to make the most of each person's unique profile of qualities, become imperatives for competitiveness both in the labour market and in other markets and affect all economic entities. In the future, the importance of soft skills will continue to grow and, in combination with digital competences, they will become an immanent feature of modern human capital.

Higher education should aim not only to equip its graduates with professional knowledge, but also to impart to them different skills such as: critical thinking, creativity, emotional intelligence, interaction with people, team management, negotiation, and flexible consciousness. Such soft skills are needed in the 21st century (Doyle, 2017). In the context of university education, it is important to develop not only professional hard skills but also such competences that affect the ability to effectively behave under uncertainty and rapidly changing work or social environment (Arbuz & Dinner, 2019). While teaching students today (Wats & Wats, 2009), it is necessary to choose such forms and methods that will contribute not only to the development of professional skills, but also to the development of soft skills (Arat, 2014; Appleby, 2017)

## **2. METHODOLOGY**

This research aims to evaluate the degree of acknowledgement of soft skills by university students and to define the preparedness stage of students-economists from North-Central Region of Planning (NCRP), Bulgaria for professional realization under the conditions of digital transformation. The authors' team focused this research on the NCRP because the Tsenov Academy of Economics Svishtov is located there. Moreover, it is important for the researchers to investigate how undergraduate students in the North-Central Region of Planning differ on levels of soft skills. The study analyses soft skills self-assessment in a group of 126 students in Economics, from seven universities located in the North-Central Region of Planning, Bulgaria. The approach is quantitative, non-experimental, cross-sectional, and descriptive and is framed within an analytical empirical paradigm. The questionnaire survey is self-administered, a hyperlink to the questionnaire is sent to over 200 students, and 126 willing respondents completed the survey. These 126 respondents formed the research's voluntary response sample. The anonymity of the respondents was guaranteed during the survey implementation. When students entered the first page of the questionnaire, a detailed description of the study was offered, and students were informed that all participation should be of their own free will. A 23-question questionnaire containing single-choice, multiple-choice, matrix and Likert-type questions was divided into four groups. The first group of questions focuses on the socio-demographics of the respondents, the second group – on the self-assessment of skills and competencies, the third group focuses on the assessment of the environment, and the fourth group explores opportunities to improve/enhance students' readiness for the labour market. This particular research is focused on the questions concerning students' soft skills (the third group of questions). The results represented in this article are a part of a bigger research focused on examining the preparedness stage of students-economists from North-Central Region of Planning (NCRP), Bulgaria for career realization in the labour market.

## **3. SELF-ASSESSMENT OF SKILLS POSSESSED BY STUDENTS**

New technologies and digitalization create conditions for increasing production efficiency, which is why digital and soft skills are becoming increasingly necessary in all professions and their possession is becoming an important requirement for occupying a given position. Therefore, possessing basic and advanced digital skills in the fields of communication, information, content creation, security and problem solving in a digital environment, as well as possessing skills for working together, quickly navigating a given situation and making decisions, empathy and cooperation is essential for the professional realization of young people. In the survey conducted, the respondents first had to assess to what extent they possess skills for working in a digital environment. The results obtained generally show that over two-thirds (68.1%) have excellent basic skills in most of the areas examined (Figure 1).

This can be explained by the fact that half of the respondents are young people, aged between 25 and 35, who are more interested in new technologies and are highly motivated to use them. However, there are students who stated they have insufficiently developed basic skills in these areas –an average of 3% of the respondents. Given that basic skills are commonly used in everyday activities related to information seeking and communicating, it is necessary to stimulate students' desire to acquire at least these basic digital skills. More specifically, the largest number of respondents (81%) stated they have excellent skills in two areas – communicating via conventional channels such as sms, e-mail, Viber, Messenger and searching for information by using different browsers. The presented result is due to the fact that the acquisition of these skills does not require too much time and financial resources, and the activities related to them do not require special electronic devices. Even the smartphone is a suitable tool for the purpose.

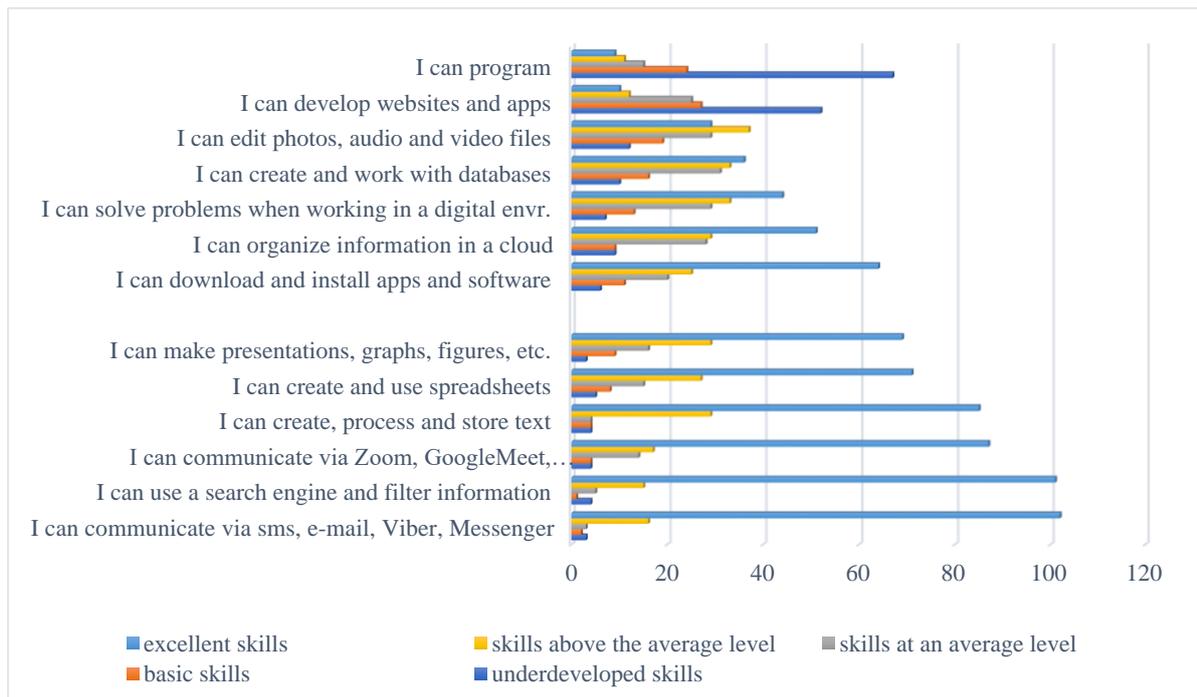
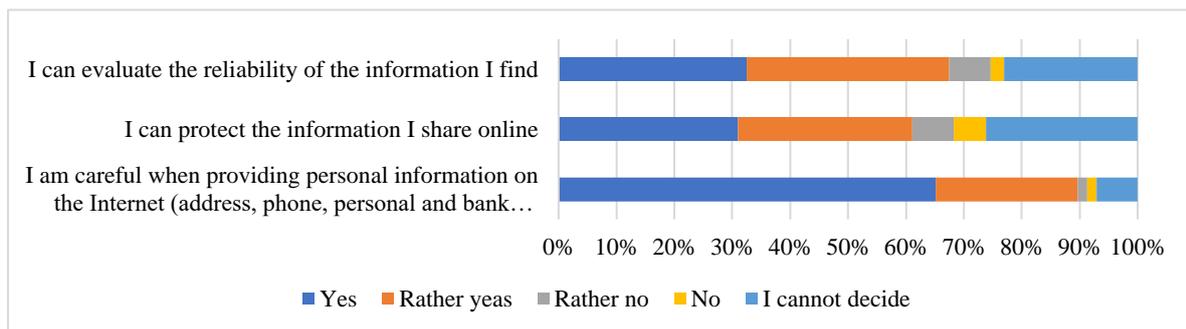


Figure 1: Self-assessment of digital skills (basic and well-developed)  
 (Source: author' calculations based on students' responses)

Among the basic skills for creating content, according to the respondents' self-assessment, the most developed are those for processing and storing text – two-thirds of the respondents (67.5%) stated they have an excellent command of them. Approximately half of the respondents rated their skills for creating and using spreadsheets and making presentations, graphs, figures, etc. as excellent – 56.3% and 54.8%, respectively. These results could not be defined as favorable, as a larger number of students would be expected to have them. Given that all skills are necessary in the educational and working process, lacking them would make it difficult to acquire the necessary knowledge and skills in training and would hinder the quick finding of a job. Advanced digital skills appear to be underdeveloped among students. Only a third of survey respondents (32.7%) feel they have excellent skills in the advanced segment. However, the high self-assessment of basic digital skills can be a prerequisite for acquiring better developed skills in the future, as long as students are provided with the necessary conditions and incentives to do so. The largest number of respondents (69%) state they have excellent skills (advanced level) in the field of communication via applications requiring a higher degree of knowledge such as Zoom, Google Meet, etc.

This is largely due to the Covid 19 pandemic, which has forced a large number of people to communicate (personally and professionally) and be trained via similar applications. Students' self-assessment regarding their competence to download and install applications and software is lower – 50% think they have excellent skills in this area. The skills needed to be able to use cloud systems for sharing and organizing information are well developed among the respondents – 40.5% indicate that they possess excellent skills. Students also find it difficult to use specialized software for editing photos, audio and video files – less than a quarter of the respondents (23%) consider these skills highly developed. However, almost 10% do not possess similar competences. The least developed skills are those needed for programming and developing websites and applications. On average, only 7.5% are of the opinion that they have excellent skills to perform these activities. On the other hand, half of the respondents (53.2%) define their programming skills as insufficiently developed, and 41.3% think they lack the skills needed to develop websites and applications. In terms of security of the activities and devices used in a digital environment, competences are not so well developed – on average, less than half of the respondents (42.5%) state they can protect themselves in the virtual space. (Figure 2) Almost two-thirds (65.1%) of survey respondents are extremely careful when providing personal information online, 24.6% are more evasive but still careful. This means that almost 90% of the respondents should still be able to protect their personal data on the Internet. However, less than two-thirds of the respondents (61.1%) believe they can protect the information they share online. Slightly more of those who responded to the survey (67.5%) believe they can assess how reliable the information offered to them on the global network is.



*Figure 2: Self-Assessment of Internet Security Skills*  
 (Source: author' calculations based on students' responses)

Although a significant part of the respondents state they can maintain the security on the Internet, their number should increase. The issue of cyber security is becoming more pressing given the number of frauds committed every day. Some of them have serious social and economic consequences. The research also raised the question of the degree of mastery of digital skills, according to the specifics of the chosen university major. The analysis of the results regarding the possession of skills for working with universal applications (MS Office, etc.) shows that the majority of the respondents (71.4%) have a high and professional level of proficiency, and those with professional skills predominate among them (Figure 3). This reveals that most of the respondents are not only able to perform work tasks and satisfy their personal interests in a technological environment, but are able to quickly master other universal and more specialized applications, and also develop strictly profiled, highly professional skills. However, although few in number, there are students among the future specialists-economists who do not have the specified universal skills (2.4%) or possess them to an insufficient degree (3.2%), and this fact is disturbing. Bearing this in mind, working mechanisms must be sought to stimulate and motivate all students to build an attitude and develop the skills necessary for their future realization in the labour market.

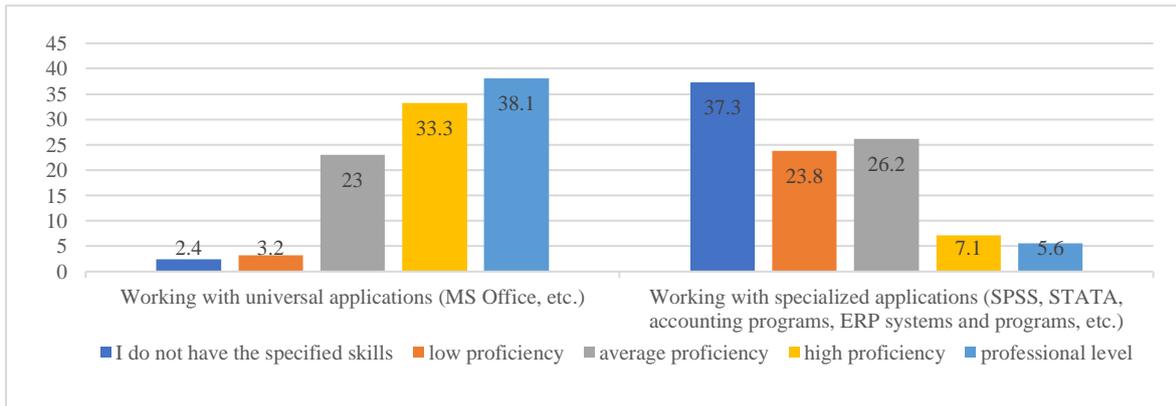


Figure 3: Self-assessment of digital skills according to the specifics of university majors  
 (Source: authors' calculations based on students' responses)

Regarding the work with specialized applications (SPSS Statistics, accounting programs, ERP systems and programs, etc.), as expected, most of the respondents either do not have such skills (37.3%) or have a poor command of them (23.8%). These results can be explained by the fact that the respondents have not yet completed their education, and the majority of them are in its initial stages, where basic knowledge and skills are mainly acquired. However, the remaining almost 40% of the respondents have good, incl. 12.7% – very good and professional training in the field under consideration. Having specific skills for working with specialized software products is an advantage not only from a short-term point of view (for example, to find a job), but also has many long-term benefits. Regardless of the fact that the existing specific skills will quickly become obsolete, knowing the principles of work is a stable grounding and an important prerequisite for quickly mastering new professional skills, for rapid adaptation of staff to the peculiarities of a new working environment respectively. The research team places a great emphasis on the soft skills possessed by the respondents (economics students). The self-assessment of the following thirteen soft skills: teamwork, adaptability, organizational skills, responsibility, prioritization, ability to take risks, creativity, critical thinking, learning skills, communication skills, people motivation, conflict management and empathy is made on a five-point scale (1 – insufficiently developed; 5 – excellent skills).

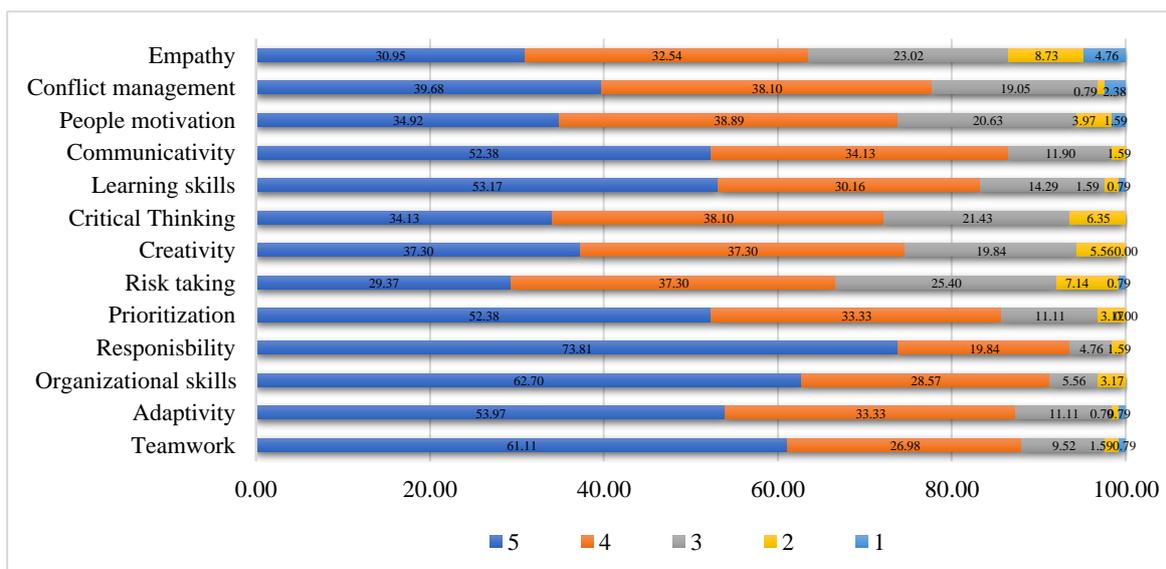


Figure 4: Selfassessment of the acquired soft skills  
 (Source: authors' calculations based on students' responses)

The results of the survey show that 61.1% of the students believe they have excellent teamwork skills, while only 1 respondent (0.79%) believes they have insufficiently developed skills. The variety of practical exercises, case studies, role-playing games and course assignments that students do in teams during their profiled training can be given as the reason for the high self-assessment of the ability to work in a team. Thus, they not only improve their ability to work in a team, but also gain the necessary confidence for its high level of mastery. Sixty-eight students, or 54%, state they have a well-developed ability to adapt; 33.3% believe they have very good adaptability skills; 11.1% - good and only 0.79% believe they have a low or insufficient level of mastery of this soft skill. An interesting aspect of the study is that the self-assessment of the soft skills of organization and responsibility has the highest levels of mastery according to the respondents. 62.7% and 73.8%, respectively, think they have excellently developed both skills, while none of the surveyed students think they have insufficiently developed organizational skills and responsibility. Given the fact that the development and improvement of the two soft skills are more related to personal psychological development than to professional realization, the high level of assessment is completely logical. The results are similar for the following soft skills: prioritization, learning skills and communication skills - more than half of the surveyed students gave themselves an excellent self-assessment, 52.4%, 53.2% and 52.4% respectively. The lowest results of the respondents' assessment were recorded for the skills ability to take risks, critical thinking, motivating people and empathy. A third of them state they have an excellent level of mastery of the above-mentioned skills, 29.4%, 34.1%, 35% and 31% respectively. The soft skills examined in the present analysis and the level of their mastery are an extremely important prerequisite for the successful professional realization of economics students in the labour market. The results of the survey conducted show that the respondents self-assess the level of mastery of the studied thirteen soft skills as relatively high.

#### **4. CONCLUSION**

The presented survey results show that the self-assessment of the respondents regarding the possession of basic digital and more popular soft skills is high. They successfully cope with the search for information and communication via conventional channels; have a good grasp of word processing and use universal applications without problem; they know how to work in a team, they are responsible and organized. Students rate their higher-rank digital skills as weaker and underdeveloped. A large number of the respondents find it difficult to create and work with databases, they have little knowledge of and do not use specialized applications, and they have almost no skills to program and develop websites and applications. The fact that a part of the respondents cannot reliably maintain their security in the digital space is also worrying. The reported results can be explained by the fact that the respondents are still being trained and are about to acquire more specialized skills, as well as by the fact that they have not yet encountered the conditions of the labour market and the specific needs of businesses. The stated shortage of advanced digital skills and the need to develop and enrich soft skills should be seen as challenges the education system and students must address. Stimulating factors in this regard are the young age of the respondents and their inherent interest in new technologies, the definite awareness (90% of the respondents) of the need to constantly update and expand the existing knowledge and skills, as well as the desire to continue upgrading them (88 %). Higher schools, which must provide an adequate educational environment and resources for learning, and appropriately motivate young people to build lifelong learning habits play the main role in realizing the current potential of students. In this process, they must be supported by the state, businesses and all other stakeholders.

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## GENDRE-ORIENTED PACKAGE DESIGN: THE NEED OR A (MARKETING) TREND?

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### **ABSTRACT**

*Every design project starts with the analysis of user needs and preferences. The same goes for marketing. But do we care about the needs of our clients or do we impose trends through marketing tools in order to achieve the best possible sales results for our brands? Packaging design is an important factor in attracting customers, informing them about the product's properties and use, as well as highlighting the brand through a recognizable visual identity. Design trends and standards are changing rapidly. There is an increase in the number of consumers who do not fit into traditional segmentation groups and who require a completely different approach to packaging design. Discussions about gender are more relevant than ever, so in this light it is interesting to explore the need for gender-oriented or gender-neutral design from the perspective of customers. For the purpose of research on user preferences, an online survey method was applied. Respondents chose between four images for the same type of product, two examples of which were products with gender-oriented packaging design and two examples of gender-neutral design. The images were selected according to certain criteria from the relevant literature. The obtained results show that packaging design should adapt to the times and adequately represent the demographic segment for which it is intended. This means that a brand can have both gender-oriented and gender-neutral packaging, as long as the design is good, avoids stereotypes and does not offend anyone.*

**Keywords:** *Consumer perception, Gender-neutral design, Gender-oriented design, Marketing, Packaging*

### **1. INTRODUCTION**

The subject of this paper is the impact of packaging design on consumers and especially during the process of decision making which product to choose. So we could say that it is a matter of marketing, but also a matter of design. Marketing and design are in a symbiotic relationship, but have different insights into consumer behaviour and approaches to meeting consumer needs (or user needs, from design point of view). As more and more general problems appear – sustainability, downturn in consumer spending, youth unemployment, a growing number of elderly people etc. – these problems require a multidisciplinary approach; even marketing and design connectivity at different levels should be reconsidered and transformed (Rocco, 2019, p. 53). The role of design has been and still is a subject of discussion. From those who see design as the key element of every organization's strategy and the most vital tool of innovation in business to those who believe that design is a key element of manipulation in making poor-quality products and services desirable, thereby promoting consumerism in the most negative sense. However, design should in first place be human-centered, providing better solutions for different needs of end-users (Rocco, 2021, p. 18). The design process requires a high degree of creativity in a way that is controlled, directed and channelled towards producing a viable, practical solution to the design problem so that it meets or exceeds the stated aims of the design

brief. While creativity in design is important, design is an activity that serves economic as well as creative goals. The design process should therefore help to ensure that a design satisfies such considerations by remaining focused on the aims and objectives of the client (Ambrose & Harris, 2011, p. 61). For each product, we can expect three categories of consumer response to its appearance. Those three categories are the attention paid to the product, the way the product is categorized, and the aesthetic response that the appearance of the product induces. The appearance of the packaging significantly affects the cognitive and affective reactions of consumers to the product (Schoormans & Robben, 1997). The marketing function of packaging is commonly related to the ability of packaging to communicate various marketing messages. Packaging convenience is related to the successful design of packaging and the material that it is made of, but it is also represented through messages communicated to consumers via the communicative dimensions of packaging. Therefore, packaging convenience should be considered a consumer packaging feature, as well as a marketing tool (Draskovic, 2010, p. 272). The challenge for designers is to specify perceptual information in ways that minimize cognitive demand, favouring direct perception. Affordances allowed by packaging features can be communicated leveraging varied senses. In packaging, these are generally the following: vision, audition and touch. However, designers should be encouraged to communicate the presence of affordance by creatively considering how each of the senses could be leveraged to communicate possible actions (de la Fuente et al., 2015, p. 159). Packaging provides a surface upon which to communicate information about the product and the brand, and as such, it is an essential element of product branding. Through the use of text, images and other communication devices, packaging can articulate the attributes and benefits of a product to consumers. Packaging also works to convey the brand characteristics that will position it within the minds of consumers and that will ultimately differentiate it from its competitors. Packaging is often the first point of contact that a consumer has with a brand, so it is hugely important that it initially draws their attention and also quickly conveys the messages that both present and support the brand. Communicating a brand message extends beyond the information and visual content of packaging. The physical materials used for packaging products also importantly contribute to the overall brand statement projected. A brand cannot be positioned as a high quality or luxury product if its packaging is fragile and low quality. There has to be a direct correlation between the packaging's physical attributes and the messages that the brand seeks to project (Ambrose & Harris, 2011, p. 10).

## **2. GENDER STEREOTYPES AND PACKAGING**

As we focus on packaging design in relationship with genders, we first have to define the term. Gender stereotypes often are internalized by men and women, and we therefore focus both on how men and women are seen by others and how they see themselves with respect to stereotyped attributes. Gender stereotypes are generalizations about what men and women are like, and there typically is a great deal of consensus about them. Stereotypes can serve an adaptive function allowing people to categorize and simplify what they observe and to make predictions about others (e.g., Devine and Sharp, 2009; Fiske and Taylor, 2013). However, stereotypes also can induce faulty assessments of people – i.e., assessments based on generalization from beliefs about a group that do not correspond to a person's unique qualities (Hentschel et al., 2019, p.2). How the elements are presented and how the inter-relationships between them create channels of communication affect how we then receive and interpret that information. Semiotics explains how graphics communicate as signs and symbols, and demonstrates how cognitive meanings are based on the knowledge that we acquire through perception, intuition and reasoning, while denotive meanings directly refer to something (Ambrose & Harris, 2011, p. 96). Packaging design is also a product attribute through which a consumer differentiates one brand from another.

It is also the way in which consumers express personal preferences and establish emotional connections to particular products. Packaging can be varied to present different characteristics to the consumer such as light, heavy, recyclable, non-recyclable, high quality or value (Ambrose & Harris, 2011, p. 107). Many scholars working in the fields of design and gender have taken an interest in the ways in which cultural gender norms are not only reflected but also constructed by objects. Consumer goods are not only the result of cultural beliefs about gender; they also create notions of what is masculine, feminine, and even gender-neutral. Design may be understood as a language, but objects communicate differently than text. (...) Deploying established conventions for form, shape, colors, words, font, texture, decor, symbolism, signs, size, and layout, products communicate the gender of the intended buyer and/or user (Sanders 1996; Lees-Maffei 2011; Cockburn and Ormrod 1993 in McIntyre Petersson, 2018, p. 338). According to Rajkumar (2021), we can look at packaging as a silent sales agent influencing the intent of buying preference by packing configuration, consistency, etc. For this reason the majority of companies are involved in packaging, ultimately to gain a non-cost advantage through using pack to provide a positive image of the products it holds. Packaging is indeed a core component of brand differentiation and identity, as it allows the producer to differentiate its labels and brands among its rivals. Packaging really influences the buying behavior of many people, particularly among youths (Rajkumar, 2021, p. 780). Gender identity is the result not of physical differences but of complex discursive practices in which gender, sexuality, and desire are coproduced. Building on speech act theory, Butler (1988) conceives gender as a set of performative citational practices. They reproduce discourse but can also work subversively. In this sense, gender both enables and disciplines subjects and their performances – it is essentially a citation of all previous performances of gender, an imitation of itself, an idealized norm. Every citation of gender, even on a package, allows for a change, or a slip, in the way gender is enacted. Packages do not only ask us to choose between different products in terms of contents. By telling us whether the contents are “for her,” “for him,” perhaps unisex, or have no gender at all, packages perform gender. By extension, they not only provide scripts for practices of consumption but also take an active part in the performativity of gender (McIntyre Petersson, 2018, p. 341). Packaging acts as an intermediary between the product itself and the consumer, it diverts the consumer's attention from the product and redirects it to direct written and visual information about the contents of the packaging. In this way, packaging influences consumer behavior. This means that the consumer decision is not made by the individual consumer who chooses, but is shaped by marketing instruments. According to Petersson McIntyre (2018), packaging does not ask the consumer to choose between different products according to their contents. By communicating whether the product is for her, for him, unisex or completely gender-neutral, the packaging represents that gender. It works not only on consumerism, but also on the active description of gender characteristics and behavior. The perceived femininity or masculinity of a product is at the service of primary organizational dimensions. It helps consumers quickly categorize a product and thus significantly speeds up the categorization process. Each individual creates gender images both for himself and for products. According to research conducted by Gloria Moss (2007), there are basic differences between feminine and masculine design. In her experiment, women preferred designs that were colorful, round, cheerful, and had non-technical features. The opposite qualities were more attractive to men, such as colourlessness, seriousness, monotony and technicality. The problem of gender-oriented design can be viewed on multiple levels. The most noticeable distinctions can be seen in products intended for children, especially toys. We can notice that stereotypes of typically male or typically female toys are often imposed. This trend consequently continues with toy packaging design, representing social and moral ideologies constructed by adults as they carry gender characteristics (male and female).

According to Souza et al. (2021), the apparent choice for a given toy based on the sex of the child is more of a social construct than a child's choice. The packaging and content of toys reflect what society expects of girls and boys since the early years of childhood. Colors help children to associate and include a toy genre. Colors vary according to each toy's purpose, as they carry the intention of communicating, conditioning the production of particular meanings and not others in the culture of a particular social group. Thus, it is understood that the color in the toy packaging intended for children reinforces the idea of binary gender roles concerning the colors that boys and girls should use in a hetero-society. In addition to the colors, the toy package reinforces the idea that girls should work at homework, be mothers, and present themselves as well-dressed and beautiful. Meanwhile, boys are encouraged to play in professions that require strength, courage, or be a successful entrepreneur. That is, culturally, through play, findings from their research about toys package circulate social roles expected in culture, instructing children on how they should play. Messages on the packaging of children's toys can reinforce the representation of gender roles in a way that society expects, thus imposing social norms of behavior from early childhood. The construct of what is feminine and masculine mediated by toys is still strongly perceived in commercial sense both by how they are exposed and by the colors, illustrations, and shapes of the packaging. In this way, toy packaging becomes attractive, loaded with meanings and messages directed at the tasks that boys and girls must perform in society. In other words, they become social agents that foster and act in the configuration ordered by what boys must do to be socially accepted, reinforcing the binary gender role, stereotyped in society, rooting cultural constructions of the adult world in the development of children over three years old (Souza et al. 2021, p. 10). Discussing the marketing role of gender-oriented packaging design, McIntyre Petersson states that consumer choice should be at the heart of branding strategies. Representing gender identity on consumer packaging in ways that question or challenge stereotypes must also be related to market making and attempts to catch the eye of the consumer on a shelf packed with many similar products. The qualification of products does not only address consumer types – it increasingly incorporates contemporary understandings of gender identity as fluid in its call for consumers' attention." (Petersson McIntyre, 2018, p. 354). The literature analysis of packaging for different products and their gender characteristics indicates the possibility that, despite claims that customers are in the center of attention, marketing experts do not listen to their wishes and needs in an honest way, but rather impose trends and adhere to stereotypes that are overcome in reality. This phenomenon is particularly worrisome in the case of packaging for children, which encourages stereotypes about gender differences. The classic gender-based approach to packaging design is no longer as efficient or effective as it once was. Therefore, more and more brands are turning to gender-neutral design. One of the main reasons for this upheaval is young consumers. According to a McKinsey study, 48% of Generation Z consumers and 38% of consumers of other generations value brands that do not classify products by gender (Prokopets, 2022).

### **3. RESEARCH METHODOLOGY AND FINDINGS**

For the purpose of the research, an online survey method was used. Respondents chose between four images of the same type of product, two of which were products with a gender-oriented design, and two with a gender-neutral design. The images of the products were selected according to the criteria of the literature used for the purpose of creating this paper. When compiling the questionnaire, the starting point for selecting examples of gender-oriented and gender-neutral product packaging design were the scientific works of three authors who analyzed consumer behavior in relation to their gender and some specific products included in their previous research: Moss (2007), Cakiroglu (2017) and Holaschke (2021). The survey was conducted online in the period from June 3, 2022 until June 17, 2022 starting and ending at

1:00 p.m. It consisted of a total of 20 questions. The first two questions related to demographic data; gender and age group. The other 18 questions were of the picture selection type. The respondents chose the products that were most aesthetically appealing to them. The categories were selected according to the criterion of equal use among both genders. All images have been edited to be the same format and without any background. The sample consists of 149 respondents, of whom 58.4% (87) are women and 41.6% (62) are men. According to age, 32.2% (48) belong to the age group 18-24, 41.6% (62) to the group 25-34, 18.8% (28) to the group 35-44, 5.4% (8) to the group 45-54 and 2 % (3) in the 55+ group. The age groups 45-54 and 55+ were not included in the analysis due to the insufficient number of samples. Although the respondents were asked to be objective about the brands, so that their affinities for the particular brands used would not influence their choice, it is not possible to assess how well the respondents adhered to this warning. The logo could not be covered or removed as it is an integral part of the design.

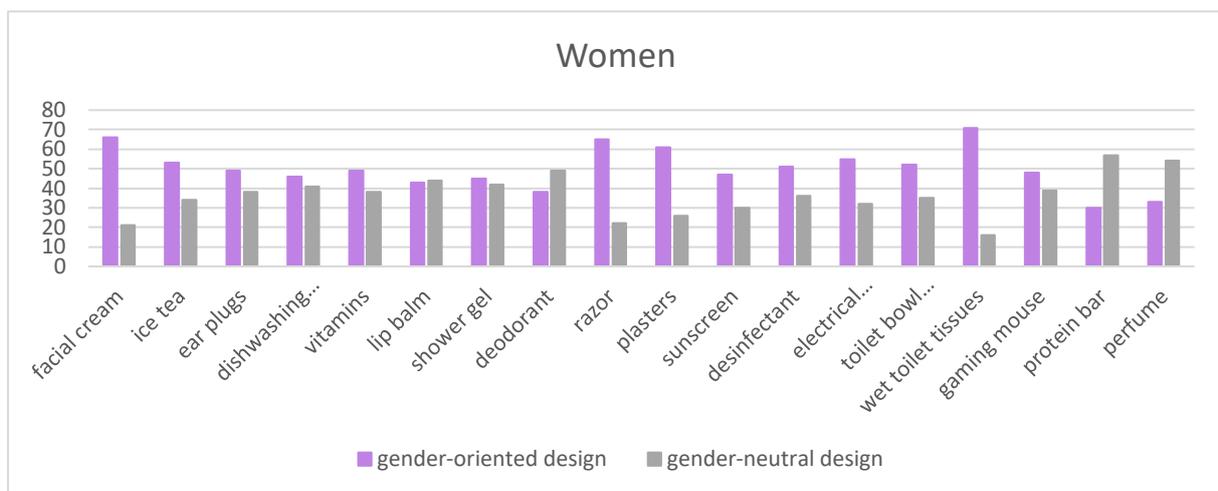


Figure 1: Results concerning package design from women respondents  
 (Source: research results)

In total, there were 87 women among the respondents.

On average, 57.6% of women chose a gender-oriented packaging design, while 42.4% chose a gender-neutral design (see Fig. 1). Most women (over 70%) chose a gender-oriented packaging design for facial cream, razor, plasters and wet toilet tissues.

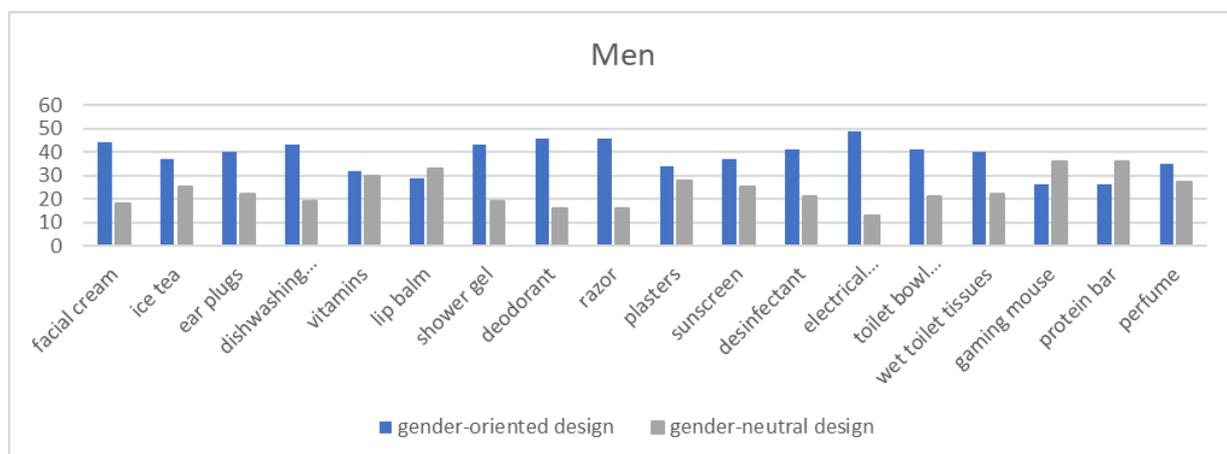


Figure 2: Results concerning package design from men respondents  
 (Source: research results)

In total, there were 62 men among the respondents. On average, 60.7% of men chose a gender-oriented packaging design, while 39.3% chose a gender-neutral design (see Fig. 2). Most men (over 70%) chose the gender-oriented packaging design for facial cream, deodorant and razor.

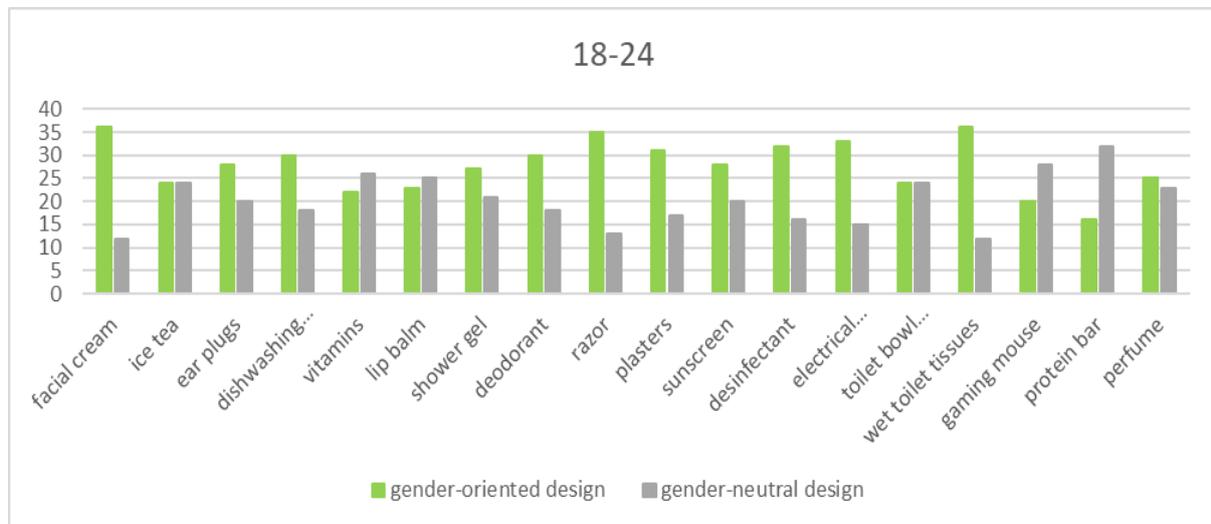


Figure 3: Results concerning package design from respondents aged 18-24  
 (Source: research results)

The age group 18-24 had 48 respondents. On average, 59.7% of the 18-24 age group chose a gender-oriented packaging design, while 40.3% chose a gender-neutral design (see Fig. 3).

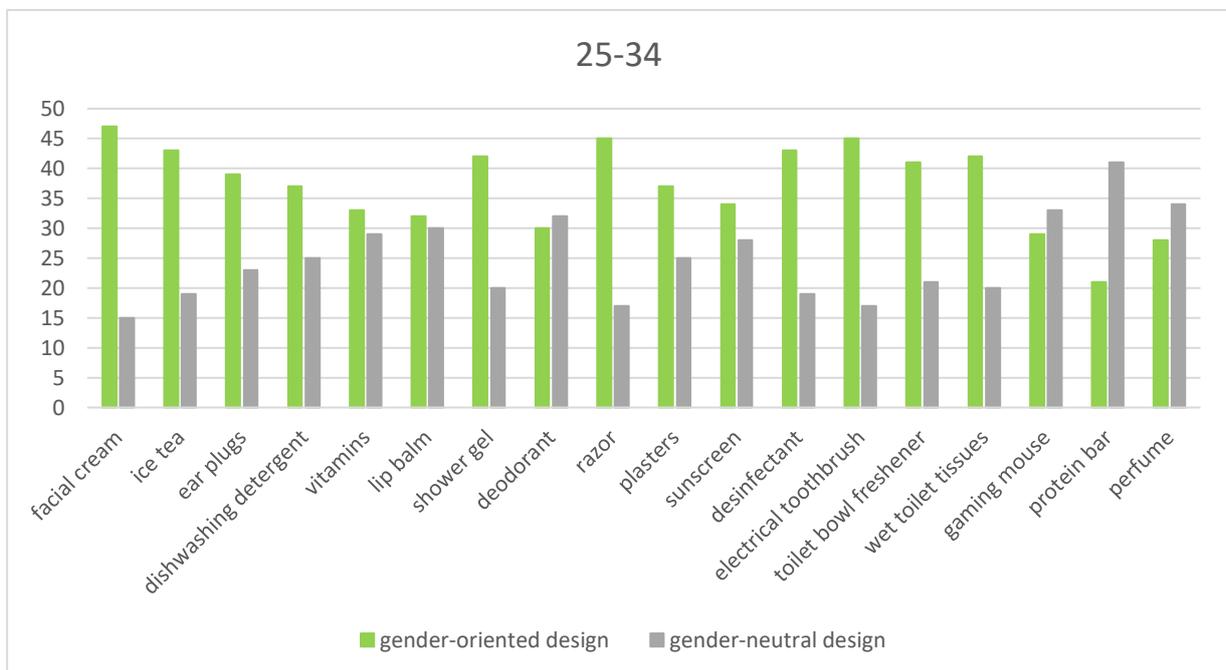


Figure 4: Results concerning package design from respondents aged 25-34  
 (Source: research results)

On average, 59.9% of the 25-34 age group chose a gender-oriented packaging design, while 40.1% chose a gender-neutral design (see Fig. 4).

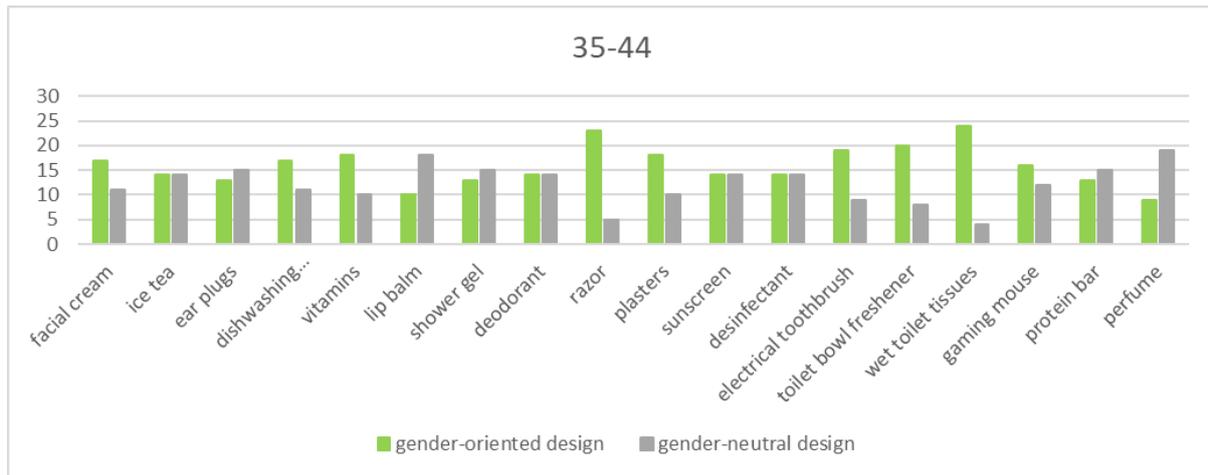


Figure 5: Results concerning package design from respondents aged 25-34  
(Source: research results)

On average, 56.7% of the 35-44 age group chose a gender-oriented packaging design, while 43.3% chose a gender-neutral design (see Fig. 5).

### 3.1. Comparison of results by gender

Men (60.7%) and women (57.6%) equally prefer gender-oriented packaging design. Several products with gender-oriented design were chosen by over 70% of both genders, while no gender-neutral packaging design stood out in that way. Among women, the most accepted gender-neutral packaging design was for the protein bar with 65.5%, and among men, two products stood out with the same percentage of 58.1%; gaming mouse and protein bar. According to these results, women accept gender-neutral design slightly more than men, but both genders still prefer gender-oriented packaging design. These results can be explained by evolutionary. Both genders prefer products that they can quickly categorize and fit into their own personality. However, it is important to emphasize that the difference in percentages between gender-oriented and gender-neutral design is not extreme. It is this difference that points to the potential future of design and changing consumer preferences.

### 3.2. Comparison of results by age group

Age groups 18-24, 25-34 and 35-44 equally prefer gender-oriented packaging design. According to these results, the age group 35-44 accepts gender-neutral design (43.3%) the most, compared to age groups 18-24 (40.3%) and 25-34 (40.1%). But the differences are so small that in this case they are negligible due to the unequal number of respondents in each group. Certainly, as with the comparison by gender, it should be emphasized that the difference in preferences regarding gender-oriented and gender-neutral design is not extreme. That is, consumers of all age groups equally accept gender-neutral design, which, again, points to the future and development of it among all demographics. As mentioned earlier, the two age groups: 45-54 and 55+ were not included in the analysis due to the insufficient number of samples.

### 3.3. Limitations of the research

One of the limitations of the research is the insufficient number of respondents in elderly age groups. Also, the sample of respondents can only provide indications for drawing certain conclusions. It should be taken into account that the research was carried out on a certain specific types of personal products for well-being and health that are also more susceptible to gender-oriented packaging design than products from some other industries.

#### 4. CONCLUSION

Gender-neutral design is gaining importance over time and is being defined in more detail, but it is still a fairly new phenomenon that is not clearly defined. Gender-oriented design, on the other hand, is extremely well defined by every element it uses, but also well explained using the theory of evolutionary psychology, consumer behavior and identity psychology. Although inclusivity and gender-neutrality is an important topic of today and consumers are offered a wide range of designs, gender-oriented design is still an essential foundation of almost every product. According to the results of the conducted research, consumers prefer gender-oriented packaging design, but it is evident that they also accept gender-neutral design for some products. Regardless of demographic data, in this case gender and age group, consumers accept gender-neutral design and in some cases even prefer it. This data imply the possible future of packaging design development and indicate the potential of gender-neutral packaging for the future. In their marketing approach, brands should listen carefully to their consumers so that the response to their requests is authentic. Consumers want to use brands that reflect themselves, that is, their personality and mentality. Therefore, it is increasingly important to think outside the framework of demographic segmentation and focus attention on inclusiveness and diversity. The future of design does not lie in the complete integration of one style and the rejection of another, but in diversity and an extremely wide range of designs. That is, brands should orient themselves to their consumers and design for them, and not a predetermined demographic segment, because the same consumers who prefer gender-oriented design in one category, prefer gender-neutral design in another category. Consumers are not a homogenous group of people who are offered a design. That is why every brand package should be designed according to consumers, not for consumers. Packaging design, therefore, needs to adapt to the times and adequately represent the consumer segment it is intended for. This means that a brand can have both gender-oriented and gender-neutral packaging, as long as the design is good, avoids stereotypes and does not offend anyone. The future of packaging design is, therefore, versatility, variety and expressiveness.

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# PREVENTION OF ACCIDENTS ON SHIPS IN CASE OF PIRATE ATTACKS

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## **ABSTRACT**

*Piracy activities, if they haven't already, should receive more attention from the research and academic community as well as from all international security agencies. Piracy activities in the 21st century are far from random attacks by pirate groups, but rather well-organized criminal activities that represent a constant influx of thousands of vessels every year. Piracy activities disrupt trade, raise the cost of transportation and cargo insurance, and affect the increased cost of goods and services. A special problem of pirate activities is also hidden in the fear and psychological consequences caused by the crew. Under the conditions, the best solution for protecting ships from pirate attacks is the engagement of naval forces, but considering the huge costs of implementing this type of protection, it is not economically justified or sustainable. Therefore, optimal protection on ships implies a trained and prepared ship's crew, i.e. keeping watch and an enhanced future with the use of passive protection, which includes software and hardware solutions on board with the aim of early detection of dangers. The aim of this paper was to present the appropriate protection systems on board against possible pirate attacks and to determine the optimal defense strategy.*

**Keywords:** *sea pirates, pirate attacks, prevention of pirate attacks, ship and crew safety*

## **1. INTRODUCTION**

As they did centuries ago, pirates continue to stalk the seas all over the planet today. A particular piracy hot spot is hidden in the area of the Gulf of Guinea, considering that this waterway includes 90% of world trade. Pirates have become a big problem for companies and governments. Armed with the most modern weapons and technology, pirates travel coastal waters in speedboats and operate from their own vessels, located far from shore. They usually operate in small groups and with logistical support from the mainland. However, there are operations that can mobilize a large number of people. Currently, the three areas most affected by maritime piracy are the Straits of Malacca, the Horn of Africa and the Gulf of Guinea. From the late 1990s to the early 2000s, the focus of the International Maritime Organization was on the South China Sea, particularly the Straits of Malacca. More than tens of thousands of ships pass through this strait every year, almost 1000 kilometers long, located between Indonesia, Malaysia and Singapore. Given the active piracy hotspots that pose a great danger on waterways, ships face problems protecting cargo and crew. This paper will present some of the key features of pirate attacks and the optimal choice of defense.

## **2. MARITIME PIRACY TODAY**

Sea pirates are a daily, continuous threat to a large number of ships carrying different types of cargo. Along with technological development, piracy has also taken on a completely new form in the 21st century, and pirate attacks are increasingly sophisticated and dangerous. Total shipping along piracy hotspots is falling following an increase in piracy. In this way, piracy encourages companies to choose air transport instead of ocean transport, which, although more expensive, is still safer (Sandkamp, Stamer and Yang, 2022).

## 2.1. Definition of maritime piracy

According to the International Maritime Bureau (IMB), maritime piracy is defined as "any act of boarding or attempting to board any ship with the apparent intent or ability to use force in furtherance of that act." Piracy is also defined by the 1982 United Nations Convention on the Law of the Sea (UNCLOS) in Articles 101 to 103. According to this definition, "for something to be considered piracy, it must have the elements of unlawful violence, detention or plunder of property, resulting in personal benefits of the attacker. The act of settlement, detention or robbery should be carried out by a private vessel, against another vessel, and they are carried out on the open sea or somewhere else that does not fall under the legal system of any country" (ICC, 2011).

## 2.2. Sea pirate attacks in the world

According to data published on October 12, 2022 by the International Maritime Bureau (IMB), in the first nine months of 2022, 90 piracy attacks and armed robberies against ships were recorded, which is essentially the fewest in three decades (ICC, 2022).

Type of vessel	Number of attacks	Percent
Bulk carrier	47	47.00%
Product tanker	20	20.00%
Container ship	30	30.00%
General cargo	4	4.00%
Chemical tanker	2	2.00%
Tanker	5	5.00%
Offshore supply ship	6	6.00%
Fishing vessel	3	3.00%
Refrigerated cargo	1	1.00%
TOTAL	118	

*Table 1: Total number of pirate attacks in the world in 2021  
 (Source: Manaadiar, 2022)*

Although the declining trend of pirates on vessels is obvious, this does not mean that we should not devote more attention to this still very pronounced problem that the whole world is facing, and international exchange, i.e. the economy, is suffering.

## 2.3. Types of piracy attacks

To provide some perspective on cases of piracy and armed robbery, the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia - Information Exchange Center (ReCAAP - ISC - Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia - Information Sharing Centre) assesses the significance of each piracy attack in terms of two factors - the level of violence and the economic loss caused. The violence factor and the economic factor are listed below (ReCAAP, 2022).

### 2.3.1. The factor of violence

This factor refers to the intensity of violence in an incident, and the three indicators used to determine it are:

- The type of weapon used by the attackers. Incidents of pirates boarding a ship without visible weapons are generally considered less violent compared to those armed with firearms, knives, machetes or other dangerous weapons. In cases where more advanced weapons are used, such incidents would be considered more violent.

- Dealing with the crew. Incidents where pirates kill or kidnap crew members are considered more violent compared to petty thieves who flee as soon as they are spotted. Other cases may include threats to crew members, assault or more serious injury.
- Number of pirates involved in the attack. As a rule, an incident involving a large number of pirates would be considered more significant because it has a large capacity for the use of force. A higher number of pirates may also indicate the involvement of gangs or organized groups, rather than petty and opportunistic pirates who generally operate in smaller groups.

### 2.3.2. Economic factor

This factor takes into account the type of property stolen from the ship. Cases of theft of money or personal belongings are generally less significant incidents compared to cases where an entire ship is hijacked, either because of the cargo on board or because of the theft of the vessel. ReCAAP ISC classifies all incidents into one of four categories based on a matrix of indicators of violence and economic factors. Below is a broad narrative of the four categories (Table 2).

Category	Description
CAT 1	„CAT 1 incidents involved large number of perpetrators; more than 9 men in four out every 10 incidents and 4-9 men in the other six incidents. The perpetrators were mostly armed with guns and knives, and the crew is likely to suffer some form of injury or physical violence such as being assaulted or tied up or threatened. In term of losses, the ship was either hijacked or the cargo on board was stolen, for example siphoning of cargo oil.
CAT 2	Majority of CAT 2 incidents involved 4-9 men who are likely to be armed with knives/machetes and in 1/4 of the incidents, armed with guns. The crew is likely to be threatened or held hostage temporarily to allow the perpetrators to steal the crew's cash and ship's property including engine spares. In a few cases, the crew suffered some form of injury or physical violence but less severe in nature compared to CAT 1 incidents.
CAT 3	The number of perpetrators involved in CAT 3 incidents usually involved groups of between 1-6 men. At times, the perpetrators were armed with knives/machetes/others or other items such as sticks, rods, bats etc. The crew was not harmed, although there were cases of crew subject to duress during the incident but not harmed physically. In almost half of the CAT 3 incidents, the perpetrators were unable to steal anything from the vessel, but in cases where losses were reported, stores and engine spares were the commonly targeted items.
CAT 4	The perpetrators were not armed and the crew not harmed. More than half of CAT 4 incidents involved 1-3 men who escaped empty-handed upon sighted by the crew“ (ReCAAP, 2022).

*Table 2: Classification of pirate attacks  
 (Source: ReCAAP, 2022)*

Furthermore, Chalk (2008) lists the basic types of piracy activities:

- “Opportunistic attacks (low level), usually occur when the target ship is moored or at anchor unloading cargo.
- Armed robbery at sea and/or ransom attempts (medium level), where pirates will attempt to board ships at sea to rob the ship and/or kidnap crew members to extort ransom payments from shipping companies. Preferred locations for these incidents are congested waters near traffic jams on marine highways.

- Ship hijacking (high level), pirates can seize the entire ship and cargo to negotiate a ransom for their return. A variant is a 'phantom ship' attack where the ship is given a new identity (renamed and re-registered with false documentation) in order to continue trading. The cargo is sold to a buyer who is in cahoots with pirates."

### **3. PREVENTING ATTACKS AND DEFENSIVE STRATEGIES**

There are several defense strategies used in the event of pirate attacks. Based on the studies, the key ones will be listed below.

#### **3.1. Conventions and policies at the international level**

So far, many international conventions and policies have been developed and implemented in efforts to strengthen maritime safety, such as the International Safety Management Code (ISM), the International Convention for the Safety of Life at Sea (SOLAS), the International Ship and Port Safety Code (ISPS) and others (Joseph & Dalaklis, 2021). The International Maritime Bureau (IMB) regularly collects information on piracy and proposes effective defense policies for global maritime operators and related stakeholders. Every international shipping company should develop its own anti-piracy plan. The captain and all crew must understand its working procedure and content (Kuhn, 1930). Also, in order to analyze dynamic piracy activities and develop effective defense strategies, international maritime security organizations regularly collect information on piracy and develop anti-piracy guidelines. However, anti-piracy policymaking should be even more proactive (Haapasaari, Helle, Lehtikoinen, Lappalainen, & Kuikka, 2015). Maritime security services, for example, may include private security companies that help organize armed personnel on board (Liss, 2013). Here, sub-criteria include the ship's security plan, collection and analysis of information on piracy, participation in the protection of the vessel and armed crew or guard on the vessel.

#### **3.2. Possibilities of defense in different situations and degree of risk**

In order to defend against various potential piracy attacks, the captain's ship handling and ship management skills are crucial, as captains must effectively handle all emergency incidents and make appropriate decisions (Johri and Kristhian, 2019). Also, shipping companies usually assess high-risk areas (eg the Gulf of Aden, the northern Indian Ocean and the Straits of Malacca) and arrange safe shipping routes and schedules for shipping services. Furthermore, it is essential for any shipping company that the captain and all crew clearly understand safety procedures and use protective equipment and respond to possible pirate incidents (Boot, 2009). Here, the sub-criteria include the captain's ship handling and steering ability, planning and scheduling of sailing and crew responsiveness. Preventing piracy attacks requires a good understanding of the outcome structure of pirate decision-making (Szustakowski, Życzkowski, Ciurapinski, Karol, Kastek, Stachowiak, & Markowski, 2013). Legal definitions often link several types of offenses and thus greatly complicate the understanding of the criminal offense. Thus, criminal cases defined by law as assaults include confrontations between two parties, fights between bouncers of nightclubs and patrons, violence between strangers in/around nightclubs, and assaults on police officers. Each of these subcategories has different factors. Attempting to identify and isolate the contributing factors to an assault problem will be impossible if it consists of a collection of different 'sub-problems'. Deep insights are possible when problems are precisely defined in a homogeneous set of crimes and analyzed separately or separately (Robitaille, 2019). Causative factors in the case of maritime piracy differ for each type of piracy attack. Attacks at sea may require the support of the so-called motherships that operate to increase the operational reach of pirate groups, but this is not necessary for attacks that take place in ports (Baniela, 2010).

Attacks on phantom ships require significant planning and coordination between multiple actors, with implications that the owners of the ships were involved in their planning. By focusing on types of attacks, the question of legal definition can be sidestepped. Pirate attacks on the high seas have a fairly consistent pattern. The pirates approach the ship in small motor boats, which are fast and very maneuverable. Two motorboats per attack are common. Motorboats approach alongside the target ship, and pirates use ladders or ropes to climb up the side of the ship. After boarding a ship, the pirates take over the ship by accessing the ship's bridge and forcing the crew to slow down or stop the ship so that more pirates can board. "Pirates can use small arms fire and rocket propelled grenades (RPGs), targeting the ship's bridge, to force the vessel to slow down or stop so the pirates can board" (UKMTO, 2022). UK Maritime Trade Operations (2011) recommends "a range of defensive techniques for 'ships transiting high risk areas' to prevent piracy attacks. These ship protection measures and situational measures have been developed incrementally, based on experience and data gathered by international military forces."

### **3.3. Computer technology on the ship**

Kako bi se uočile i odvratile opasnosti od piratstva, brod bi trebao biti opremljen hardverskim and software systems, such as communication systems (e.g. radar systems, hazard detection system...). Furthermore, the ship must have physical barriers to protect against a possible pirate attack (Bryant, Townsley and Leclerc, 2013). Many seafarers do not have adequate protection systems and are exposed to a higher risk of being kidnapped by pirates (Seyle, Fernandez, Dimitrevich and Bahri, 2018). Therefore, strengthening the ship and securing the necessary hardware and software is of utmost importance to avoid and prevent potential piracy attacks (Pristrom, Li, Yang, & Wang, 2013). What falls under this group of protection includes communication devices, physical barriers for the protection of the ship and ship's alarm devices.

### **3.4. Avoiding attacks on the vessel**

Spotting and avoiding piracy attacks is of key importance for any vessel that navigates routes that are subject to piracy hotspots. The basic requirements and principles of best practice regarding avoiding pirate attacks are (Gard, 2022):

- "Understanding the Pirate Threat
  - It is necessary to gather accurate information about the situation before acting in waters where pirate attacks are known to occur.
  - Threats should be closely monitored, eg through the IMO and International Maritime Bureau Piracy Reporting Center (IMB PRC) websites and stay in close contact with local ship agents and regional authorities to ensure the most up-to-date and reliable information available in every moment.
  - Consider seeking timely expert advice from specialized maritime intelligence agencies to enable appropriate decision-making.
- Risk assessment and determination of ship protection measures
  - Conduct a travel risk assessment before entering a piracy hotspot region.
  - Adopt appropriate Ship Security Measures (SPM) following available industry best practice guidelines, such as the Global Anti-Piracy Guidelines or any regional initiatives that provide more detailed guidance specific to the threat in that particular region.
  - When considering relevant SPMs, apply a 'layered defence' methodology in accordance with the example shown in Figure 1 below. It should be borne in mind that ships can be attacked while underway, at anchor and alongside the wharf.
  - Keep in mind that a proper lookout is considered the most effective method of protecting the ship. It can help in the early recognition of suspicious access or attacks, it allows setting up of defenses.

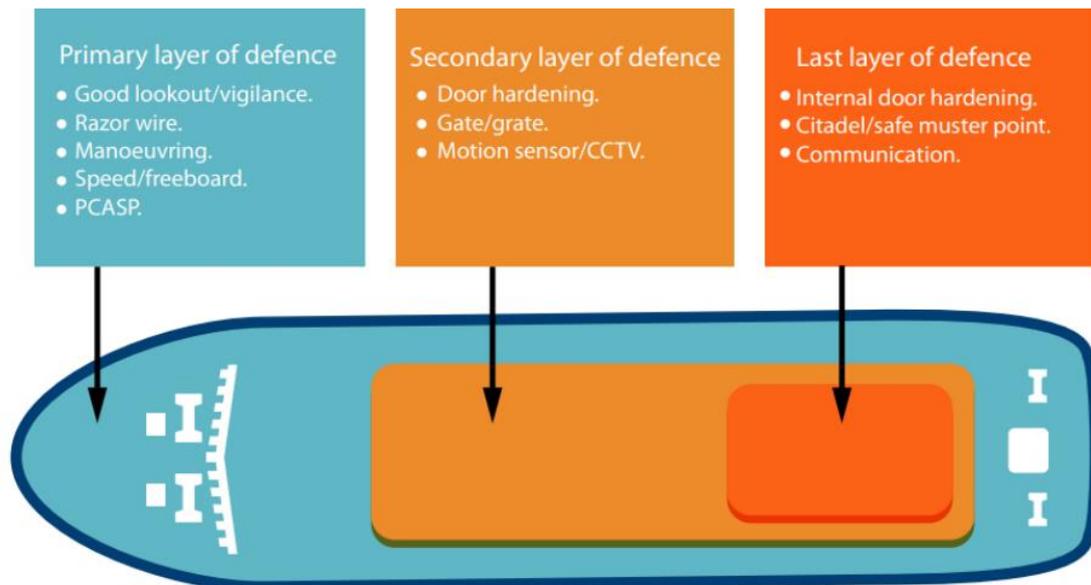


Figure 1: Example of vessel defense  
(Source: Gard, 2022)

- It is necessary to prepare the crew
  - Familiarize the crew with the safety measures established in the ship's protection plan.
  - Conduct exercises before arriving in an area of increased risk.
- Report possible attacks
  - Report all attacks and suspicious activities to the appropriate or competent regional reporting center, coastal state authorities, ship's flag state and IMB PRC. The IMB PRC operates 24/7 and serves as the primary reporting point.
  - Work together with other operators, military forces, law enforcement and social care providers in the region when necessary – before, during and after an attack.
  - If the voyage includes transit through a Voluntary Reporting Area (VRA), register with the relevant Regional Reporting Center on entry into the VRA and submit daily vessel position reports.

Ship Protection Measures (SPM) are listed below. Only those ship protection measures that provide layered protection will be listed. SPM is based on regional experience and evolves as methods change. Implementation of SPM is determined during the travel planning process. Companies are free to consider further modifications to the ship beyond the scope of this SPM and/or provide additional equipment and/or personnel as a means of reducing the risk of attack.”

#### 3.4.1. Keeping watch and increased vigilance

The master should take the following actions to help increase vigilance on board:

- Provide additional observation posts.
- Maintain a comprehensive position for the purpose of surveillance from an elevated position.
- Consider shorter shifts of observation periods to increase observer vigilance.
- Provide a sufficient number of binoculars, preferably with anti-reflection.
- Consider using night vision aids.
- Watch radar carefully and monitor all navigation alerts and communications (especially VHF and GMDSS alerts).
- Consider placing well-constructed mannequins in strategic locations around the ship to give the impression of a larger crew on watch.

- Consider using CCTV and fixed lights for better surveillance.
- Install anti-piracy mirrors on the vessel in order to have a better view behind.

#### *3.4.2. Maneuvering*

The master and officers on board should practice maneuvering the ship and become familiar with the features of ship management. The commander should practice evasive maneuvers while maintaining optimal speed. Practice has shown that such an action can defeat even a prolonged and decisive attack, because the creation of hydrostatic pressure can have a better defensive effect than speed.

#### *3.4.3. Alarm systems on board*

The ship's alarms inform the ship's crew that an attack is in progress and warn the attacker that the ship is aware and will respond. In addition, the continuous sound of the ship's siren can distract attackers. Considering this fact, it is important that:

- alarm systems have a specific (characteristic) sound to avoid confusion.
- the crew members are familiar with each alarm, especially those that warn of an attack.
- all alarms are supported by announcements over the vessel and deck loudspeakers.
- drills are carried out to ensure that the alarm is heard throughout the entire surface of the ship. The aim of the exercise is to verify the time required for the entire crew to move to a safe place.

#### *3.4.4. Physical barriers*

Physical barriers have the basic goal of making it difficult for attackers to access ships, i.e. for those pirates who try to board illegally.

#### *3.4.5. Sprayers of water and foam*

The use of water or foam sprays is effective in deterring any attempt to board the ship illegally.

#### *3.4.6. Improved bridge protection*

The bridge of a ship is usually the focal point of an attack. If pirates board a ship, they usually head for the bridge so they can take control of the ship. Only key measures to protect ships from sea pirates are listed. There are many other measures, one of which is hiring private security agencies. Ultimately, the main type of piracy attacks involves attempts to board a ship and attempted hijacking (Tseng, Her, Pilcher, 2021). The most frequently attacked ships are bulk carriers. It is necessary for ships moving along waterways to use one of the defense strategies and systems of hardware and software solutions on board as passive defense. According to the research of Psarros et al. (2011), maintaining a watch and increased vigilance was the most important component to prevent piracy attacks. Early detection of a suspected pirate vessel and a possible attack provides more time for a quick and appropriate response and the implementation of other ship protection measures that can then deter pirates from attacking and boarding the vessel (Nowakowska-Krystman, 2016; Bryant, Townsley, & Leclerc, 2013; Kraska, 2009). Time will tell, and future research will confirm, whether the trend of pirate attacks on ships will increase in the future and how sophisticated these attacks will be. In any case, it can be expected that attack techniques will become more and more advanced and therefore more dangerous for vessels.

## **4. CONCLUSION**

Maritime piracy represents a huge problem for the international exchange of goods and services, considering that a large part of the trade exchange takes place precisely by sea routes. Given that the crew on board is exposed to a large extent to the dangers of pirates, it is necessary to

pay special attention to the protection of the crew's lives. Research points to the fact that the most common attacks by pirates are on bulk carriers and that the attack strategy mainly involves kidnapping or the imprisonment of the ship's crew members. The reasons for attacking bulk carriers are mainly related to the low speed at which these ships sail, making them easy prey for pirate attacks. Therefore, the application of defensive strategies on board becomes a necessity without which one should not even sail. It is especially important to have prepared and trained personnel on board in case of unwanted piracy activities. The goal is certainly to prepare the crew for possible attempts of pirate attacks, i.e. spotting the danger and reacting accordingly. Vessels should certainly rely on both active and passive defense strategies. Passive defense implies the use of software and hardware solutions on board, the primary goal of which is to detect threats, which represents preparation for a possible pirate attack. The problem of maritime piracy will continue to remain in the focus of international security and the development of techniques, measures and policies that will resist increasingly serious and trained attackers whose attacks are becoming increasingly sophisticated and dangerous. The scientific contribution of this work is reflected in the presentation and selection of appropriate techniques and defense strategies for ships in the service of protection against pirate attacks.

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## ANALYSIS OF THE APPLICATION OF PERSONALIZED NEWS IN LEADING E-NEWS PUBLISHERS

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### ABSTRACT

*The application of artificial intelligence in digital media networks has enabled a fast and efficient tailoring of news to individual customers based on the collected personal data. The primary objective of this paper is to determine the level of application of different forms of personalized news appearing in the leading digital newspapers and magazines in the Republic of Croatia, as well as to combat the potential lack of transparency during the process of customization. The survey was conducted in two parts on a sample of 20 leading electronic news publishers. The first part of the survey focused on identifying the visible forms of personalized news appearing in the leading digital newspapers and magazines, while the second part focused on the analysis of the documents concerning the privacy policy of the digital publishing companies participating in the survey which are accessible to the public, for the purpose of establishing the level of transparency of the top e-news providers in informing their users about the potential use of Algorithmic News Recommender systems (ANRs) and news customization based on the collected personal data. The results of the survey on the visibility of personalized news published in the leading electronic media confirmed their expected broad application. However, unlike the world's mainstream media which uses the sophisticated forms of automated implicit-feedback personalized recommendation systems, the majority of the leading e-news in Croatia have restricted their offer to explicit-feedback personalized content and the most basic forms of the second-generation personalized news. The results of the analysis of privacy policy conducted among the leading e-news publishers have confirmed the lack of transparency of specific e-news publishers to a certain extent in terms of informing their users on the use of the Algorithmic News Recommender systems (ANRs) and news customization based on the collected personal data, further fueling concerns over the complete or partial unavailability of documentation on privacy policies of the specific e-news publishers who are required to inform their users of the right to their personal data protection, as well as their rights relating to the protection of privacy in the electronic communications sector.*

**Keywords:** *personalized news, leading e-news publishers, algorithmic news recommender (ANR), privacy policy, algorithmic transparency and accountability*

### 1. INTRODUCTION

The idea of personalized news production and distribution using digital media is actually more than two decades old. Nicholas Negroponte, the co-founder of the MIT Media Lab, a scientific research laboratory at the Massachusetts Institute of Technology, published his bestseller entitled 'Being Digital', in which he predicted the ways in which digital technology and personalized newspapers would develop in near future, saying: 'Think of a computer screen with newspaper articles with a HiFi volume knob, which enables you to adjust the information you receive by increasing or reducing the personalization level' (Negroponte 1995). Building upon Negroponte's 'Daily Me' concept, Thurman in his study introduced the basic theoretical concept of personalization as one of the main characteristics of digital media networks.

In this context, he underlined the following points: 'Personalization is a form of user-to-system interactivity that uses a set of technological features to adapt the content, delivery, and arrangement of a communication to individual users' explicitly registered and / or implicitly determined preferences' (Thurman 2011). The said definition has established the essential differences between the two basic forms of personalized content. The explicit personalization enables the user to make an explicit selection of the content the customer wishes to use, while the implicit personalization relies on the customer data collected using automated tools, such as their browsing history or click-throughs (Thurman 2019). Personalized news are created based on the individual users' registered preferences which are labelled as the personalized news of the first generation, appearing predominantly in the form of newsletters and RSS feeds, personalized web browser start pages based on registered preferences, customized 'My News' feed, text message (SMS) notifications, widgets, non-linear interactive media and other forms of explicit content customization (Thurman and Schifferes 2012). Although the results of the first major analysis of the application of personalized news appearing in digital media in the UK and USA have showed a continuous growth trend in the explicit content personalization (Thurman and Schifferes 2012), a number of the existing forms of the first-generation personalized news have remained marginal and largely unsuccessful because the users did not wish to invest any time or energy to activate them (Sørensen 2013, Bodó, 2019). Personalized news created by digital media networks relying on the implicit customer data are considered the second generation of personalized news. Their development is fully associated with the appearance of the personalized digital marketing, since the same types of technology and customer data are used for the collection, creation and distribution of such content. The Algorithmic News Recommenders (ANRs) are commonly classified into three main categories, including collaborative filtering, content-based filtering, knowledge-based techniques and hybrid approaches (Jannach et al. 2010; Lu et al. 2015; Karimi et al. 2018). Based on users' indirect preference signals, such as their browsing history or click-throughs, the Algorithmic News Recommender systems (ANRs) create digital profiles which they use to access the algorithmic process of creating personalized recommendations (Bodó 2019). According to Zuiderveen Borgesius and his associates (2016), the scientific discourse on the implications of the news customization system within digital media networks usually includes the assessment of its impact on users' democracy and privacy when it comes to mass user data collection, undermining users' autonomy, the lack of transparency in content personalization procedures, social profiling and selection, as well as undermining of editorial control.

## **2. THE IMPACT OF ANRs ON THE DEMOCRATIC ROLE OF THE MEDIA AND THE FORMATION OF PUBLIC OPINION**

The first negative implications of the algorithm-based content personalization within the Internet environment have been elaborated by Sunstein who introduced his idea of an 'echo chamber' and Pariser with his concept of a 'filter bubble'. Inside a digital environment with personalized content, an 'echo chamber' refers to situations in which users' opinions are reinforced by communication and repetition inside a closed system and isolated from disputes, while a 'filter bubble' is a filtrated, personalized space filtering only the content tailored to users' interests, wishes and past activity (Sunstein 2001; Pariser 2011). The founders and proponents of 'echo chambers' and 'filter bubbles' concepts agree that the algorithm-based content personalization based on the collected customer data is responsible for the emergence of communities advocating the opposing views and ideologies, as well as for their separation from the mainstream media. 'Echo chambers' enable such communities to reinforce their views by connecting with the ones who are like-minded, while 'filter bubbles' provide protection from the opposing viewpoints and ideologies. Recent research (Beam et al. 2018; Boxell et al. 2017; Bruns 2019; Davies 2018) have shown a less critical discourse of 'echo chambers' and 'filter

bubbles' towards the Algorithmic News Recommender systems (ANRs) in terms of their impact on democracy and public opinion. In the discussion in which he provided a theoretical framework set up to discuss a democratic potential of the algorithmic recommender systems and developed a typology of the potential recommender systems considering the theories of democracy pursued by Helberger (2019). Finally, he concludes that news recommendation systems can pose a threat and provide actual opportunities for a democratic role of the media, depending on the type of the so-called 'democratic recommenders' are use to reach the specific target audience.

### **3. THE MASS USER DATA COLLECTION FOR THE PURPOSE OF NEWS PERSONALIZATION AND ITS IMPACT ON USERS' PRIVACY**

The basic inputs in the process of personalized news creation and distribution are user data. Personal data such as age, gender, education level, residence, etc. Have always been used for selecting and distributing customized advertizing, marketing and media content. With the development of digital media networks and algorithmic content personalization systems, the collection of users' personal data rendered anonymous initiated on a large scale, based on the active monitoring of their news consumption behavior. The concerns related to the systematic personal data collection based on the implicitly expressed user preferences usually appear in the context of privacy implications of such data collection. Although privacy and personal data protection are closely linked under the European Union's laws and regulations, there are some considerable differences between the two. The General Data Protection Regulation (GDPR) is a secondary EU law guaranteeing the fundamental right of a person to the protection of his or her personal data, while privacy is protected pursuant to Article 8 of the European Convention on Human Rights and Article 7 of the European Union Charter on Fundamental Rights (Eskens 2020). The rights to privacy and personal data protection in the field of electronic communications have been incorporated into the existing European regulation system in the form of the so-called 'informed consent'. However, although the said legal framework provides a high level of transparency in terms of the systematic personal data collection procedure, significant problems have been observed in practice which give rise to concerns in terms of privacy and supervision of personal data processing. Namely, Zuiderveen Borgesius (2014) pointed out scarce information provided to the user of electronic communication networks in terms of the complex data flow processes used in systematic data collection based on the users' preferences, which are attributable to the lack of clear privacy policy of service providers, or worse, conditionality in the use of services by providing one's consent to behavior monitoring. In addition to this, there are cases of misinterpretation of the so-called 'freedom provisions' of the GDPR (Art. 85(1) and 85(2)) providing for exemptions or derogations from the specific provisions of the GDPR for the purposes of journalism. Namely, although the purpose of the stated provision is to allow for a public disclosure of personal information in relation to the news, not the use of such information for the purpose of further distribution (Eskens 2019), it is often used as a pretext to use consumer data for the purpose of news personalization.

### **4. RESEARCH OBJECTIVE AND METHODOLOGY**

The results of the survey on digital media conducted by the Reuters Institute (Newman 2021) have showed that over two-thirds (69 %) of media companies believed that artificial intelligence as a tool used to provide a more personalized customer experience and improve production would make an increased impact on journalism in the next 5 years, before 5G (18 %), as well as new devices and interfaces (9 %). Clearly, the media companies have gotten very far in the implementation of artificial intelligence as part of their production in order to personalize news delivery. On the other hand, the technical application of news personalization systems, and the one relying to algorithm-based news recommenders in particular, often remains imperceptible

or unclear to the end user. Since the specific surveys (Erdos 2016; Ausloos and Dewitte 2018; Eskens 2019; Bastian et al. 2020) pointed to the uneven implementation of personalized news in digital media networks in specific countries and drew attention to the potential lack of transparency in the implementation of the provisions of the European Union's regulation system protecting personal data in relation to the personalized content, the main objective of the paper is to determine the level of implementation of different forms of personalized news appearing in the leading e-news publishers in the Republic of Croatia and the potential lack of transparency in the process of their customization. The analysis of the application of personalized news onto the selected sample of the top e-news publishers in Croatia was performed in two parts in the course of November and December of 2020. The first part of the analysis focused on identifying the visible forms of personalized news appearing in the leading e-news publishers. The survey was conducted using three computers with different IP addresses. Since the providers of electronic news publishers cannot influence the personalization of the news delivered by means of social networking, the research was limited to the users of the top Croatian e-news providers through home websites of e-news publishers who accessed their sites using a desktop browser. The second part of the survey focused on the availability, accessibility and comprehensibility of documents concerning the privacy policy of the digital publishing companies participating in the survey which are accessible to the public, for the purpose of establishing the level of transparency of the top e-news providers in informing their users about the potential use of Algorithmic News Recommender systems (ANRs) and news customization based on the collected personal data. Research and analysis focuses on two fundamental research questions, which are as follows:

- Q1 – What types of visible forms of personalized news do the leading digital publishing companies in the Republic of Croatia use and are there any differences in their application in terms of their topic and orientation towards their target audience?
- Q2 – Do the leading digital publishing companies in the Republic of Croatia conduct a transparent news personalization to individual users?

The sample comprises the electronic news publishers listed in the Book of providers officially kept by the Agency for Electronic Media. At the beginning of November of 2020, the Book of Providers comprised 386 e-news publishers, with a sample of 20 e-news publishers selected among them. The control variables used in achieving sample representativeness were the following: thematic orientation, target audience of online news publishers of general thematic orientation and website traffic. During the selection of the online news publishers listed in the Book of electronic publishing providers, a structure was established containing 53 % of the popular (general-topic) online news publishers and 47 % of specialized online news publishers. The popular online news publishers were classified based on their orientation towards a national, regional, local or international target audience. There were 206 popular online news publishers listed at the time of selection of the sample units in total, with 52% of them oriented towards a national, 15 % of them towards a regional, 30% towards a local and 3% towards an international target audience. The website traffic of the online news publishers was estimated by reviewing the charts of Gemius Audience and Alexa web analytics tools used for ranking websites based on their website traffic at the time of the sample selection. The combination of the said tools was used because there is a fierce controversy over the measurement of the e-news publishers website traffic. Although Gemius Audience is a source which is frequently used in scientific analyses of online publishers' website traffic and view rate, one needs to take into consideration the fact that measurement using the said tool is not required by law for online publishers. In this context, at the time of the selection of the online news publishers sample, the GemiusRating tool used for rating websites according to the number of real users in Croatia did not contain data for some of the leading online publishing sites, such as index.hr, that

permanently abandoned measuring within Gemius 2015 or for the online news publishers owned by the Hanza media LLC that occasionally leave the Gemius measuring system (Galić 2018). By combining the set control variables, a sample containing the following online news publishers was selected, including: index.hr, jutarnji.hr, net.hr, 24sata.hr, vecernji.hr, dnevnik.hr, slobodnadalmacija.hr, glasistre.hr, zagreb.info, sibenik.in, sbplus.hr, poslovni.hr, story.hr, srednja.hr, mirovina.hr, cosmopolitan.hr, roditelji.hr, sensa.hr, studentski.hr and elle.hr. Among the 20 selected sites included in the sample, 11 of them account for popular (general-topic) online news publishers (index.hr, jutarnji.hr, net.hr, 24sata.hr, vecernji.hr, dnevnik.hr, slobodnadalmacija.hr, glasistre.hr, zagreb.info, sibenik.in, sbplus.hr), and 9 of them account for specialized online publications (poslovni.hr, story.hr, srednja.hr, mirovina.hr, cosmopolitan.hr, roditelji.hr, sensa.hr, studentski.hr, elle.hr). Among the popular online news publishers, there are 6 of them that are oriented towards a national target audience (index.hr, jutarnji.hr, net.hr, 24sata.hr, vecernji.hr, dnevnik.hr), two of them towards a regional target audience (slobodnadalmacija.hr, glasistre.hr) and three of them towards a local target audience (zagreb.info, sibenik.in, sbplus.hr). All the selected online news publishers were presented in the charts of the Gemius Audience or Alexa tools for the ranking of the 50 leading websites according to their website traffic at the moment of the sample selection.

## 5. RESEARCH RESULTS

Following the performed survey of the visible forms of personalized news based on website traffic of the leading Croatian online news publishers, it was established that all the companies participating in the sample except for cosmopolitan.hr used some of the existing forms of personalized news during the analyzed period. The monitoring of the application of the implicit or explicit news personalization on the home pages of the top online news publishers in Croatia was performed using three computers with different IP addresses, in a way that during the analyzed period a different news section or topic on the sample unit's home page was monitored. By comparing the appearance of the home page following the analyzed period, it was established that the e-news publishers in the Republic of Croatia does not include the personalization of headline news or their content by using customer data without the users' explicitly expressing it. However, it should be taken into account that the IP addresses of computers analyzing the home page of e-news publishers are from the same geographical area, due to which the first part of the analysis of the application of the personalized messages in the leading e-news publishers excludes the visibility of geotargeted editions. Unlike the implicit personalization, the personalization of the news offered on the home pages of the leading Croatian online news publishers based on the explicit users' preferences was observed in the 24sata.hr website. For instance, when clicking on the headline entitled: 'Trump Paranoia: This is a Fraud! Stop Counting Millions of Ballots'), under the news content the user is offered the possibility of activating the 'donald trump' and 'joe biden' news detection and tracking option (24sata.hr 2020). By activating the tracking of both or one of the offered topics, during the subsequent visits to the 24sata.hr website the headline news offer will be partly adjusted to the user according to his or her preferences in terms of the selected topic or topics. Most of the leading online news publishers in Croatia (85 %) use the implicit news personalization implemented through subsections located on the home page. The headlines of such personalized, automatically generated news (contextual recommendations) based on the previously selected article are often the following: 'Read more', 'Related news', 'Related articles on the same topic', 'Browse the section for more articles', 'Read more articles in this section', etc. They all have the similar layout, usually including a few links with news, often accompanied by photographs or videos. Unlike the implicit personalization, which is used by the majority of the top Croatian online news publishers only in one specified form, the offer of the explicit-feedback personalized news includes several different forms.

With the exception of the aforementioned home page personalization of the 24sata.hr website, the remaining personalized layouts created based on the explicitly registered users' preferences are visible in the form of the selected news through tags, subscriptions to newsletters related to the selected topics, RSS feeds and widgets. The application of a more sophisticated form of personalized news the readers can choose using the offered tags was identified on the index.hr website as part of the recommendations for a free subscription to the news informing them about the specific topic. For example, when clicking on the article entitled 'Trump: We won. This is a fraud. It's a disgrace to our country. We'll be going to the Supreme Court', there will appear a recommendation reading as follows: 'If you wish to receive instant notifications on each published article related to the US presidential elections, install the index.me app and subscribe for free to the tag: 'US elections' (Index.hr 2020). The largest number of different forms of personalized news is used by the same leading general-topic nationally-oriented online news publisher. Although the specialized leading e-news publishers inform their readers about a single topic and usually use the headings for dividing their news into subtopics, the results of the survey have confirmed that more than 50 % of them use at least one form of both existing types of news personalization. The survey on the transparency of the leading Croatian online news publishers in informing their readers of the potential use of the Algorithmic News Recommenders and the tailoring of the news to the users by means of the collected personal data was conducted through the analysis of their privacy policy documents which are available to the public. The analysis included the research on the sections of the leading Croatian online news publishers containing the documents on privacy policies and their accessibility to end users, as well as the content of such documents related to the mentioning of the term 'personalization'. The content of the documents on privacy policies and the notifications on the use of cookies by online news publishers in Croatia are regulated by the Directive 2002/58/EC of the European parliament and Council dated July 12, 2002 on the processing of private data and the protection of user privacy in the field of electronic communications (Directive on Privacy in Electronic Communications); Directive 2009/136/EC of the European parliament and Council dated November 25, 2009 on the modification of the Directive 2002/22/EC on universal services and user rights related to electronic communication networks and services (Directive on universal services), Directive 2002/58/EC on the processing of private data and the protection of user privacy in the field of electronic communications and the Directive EC nr. 2006/2004 cooperation between national authorities responsible for the implementation of consumer protection laws that were transposed to the legislation of the Republic of Croatia by the Law on Electronic Communications (OG 73/08, 90/11, 133/12, 80/13, 71/14 and 72/17). Storing data or establishing access to the data which has been already stored on the subscriber's or user's terminal equipment, in accordance with the aforementioned amendment to EC directives and regulations, is permitted only with the consent of the subscriber or user, after they have been fully and comprehensively informed about the purpose of the access to data processing. Upon the visit of the website of one of the online publishers during the analyzed period, it was established that 90% of the leading e-news publishers in Croatia make a part of privacy policies related to the notification about the use of cookies available together with the seeking of the consent before the users access the website content. Among the 20 online news publishers that participated in the survey, 8 of them (jutarnji.hr, 24sata.hr, vecernji.hr, dnevnik.hr, slobodnadalmacija.hr, glasisre.hr, poslovni.hr and srednja.hr) made their documents on the privacy policy visible to the users at the bottom of their home page or after the opening of the menus entitled: 'Privacy policy', 'Terms and conditions', and 'Privacy protection policy'. Six participants (index.hr, net.hr, zagreb.info, sibenik.in, sbplus.hr and studentski.hr) presented their privacy policies as part of the subsection of the documents related to the terms and conditions, which were visible at the bottom of their home pages.

The online news publishers owned by Adria Media Zagreb LLC (story.hr, elle.hr, sensa.hr, cosmopolitan.hr and roditelji.hr) had no visible subsections related to privacy policy on their websites, but enabled their users to read the privacy policy on the publishing company's website through a link that was a part of the notification on the use of cookies. The mirovina.hr e- news publisher is the only participant in the survey that had no visible subsection related to privacy policy on its website during the time period in which the survey was conducted, nor has the privacy policy been mentioned as part of the Terms and conditions. By analyzing the content of the privacy policy available on the websites of the participants in the survey, it was established that the term 'personalization' was mentioned by 9 leading popular text online news publishers (24sata.hr, jutarnji.hr, net.hr, index.hr, vecernji.hr, slobodnadalmacija.hr, glasistre.hr, zagreb.info, sibenik.in) and only one leading specialized-text publisher (poslovni.hr). However, although personalization is mentioned in the privacy policies of 50% of the participants, it must be emphasized that the stated term is used mainly as part of the explanation of the purpose of personal data collection, not as a separate service. For example, e-news publishers owned by the Styria International JSC media company mentioned the term 'personalization' in the following standardized text as part of the explanation of the purpose of the use of personal data: 'Večernji list JSC will use your personal data for the purpose of technical management of the websites, preference analysis and delivery of general personalized offers, as well as for the purpose of scientific research and the implementation of new technologies (such as machine learning and artificial intelligence) with the aim of improving user experience and content personalization, as well as for the purpose of providing access to specific information and for the purpose of communication with the user'. In addition to this, by analyzing the content of the documents on privacy policies of each e- news publisher in which the term 'personalization' is not explicitly mentioned, based on the description of the methods and purpose of data collection related to user preferences, we can conclude that the tailoring of individual news recommendations or ads is performed using customer data. Such ambiguities not only limit users' ability to control algorithmic recommenders of news and ads, but often make it impossible to identify personalized online e-news publishers services.

## **6. RESEARCH RESULT ANALYSIS AND DISCUSSION**

According to data published by the Reuters Institute in their Report on Digital Media for the year 2020, (Newman 2021) the survey has confirmed the broad application of personalized news in the leading online publishing companies in the Republic of Croatia, as expected. However, unlike the leading international media corporations which use sophisticated forms of automated services provided owing to the implicit-feedback personalized recommendations, the majority of the leading e-news publishers in Croatia have limited their offer to the explicit-feedback personalized content and the most simple forms of personalized news of the second generation, which can be attributed to the high costs of the development and implementation of innovation projects related to the algorithmic news recommenders. The survey on the visible forms of personalized news on the top online news publishers in Croatia, and of the part of the analysis related to the implicit and explicit type of personalized news in comparison to the selection of the topics and content appearing on the home pages of online news publishers has also confirmed the use of sophisticated forms of personalized news when it comes to the participant in the survey such as the 24sata.hr website. The innovative project of the Styria media services and 24sata.hr online news publisher entitled 'The personalized platform for the regional news publishing' supported in July of 2017 by the funds amounting to 500.000 EUR from the Google Fund for digital news innovations (DNI), visibly improved the system of contextual recommendations of the 24sata.hr e-news publisher for the purpose of creating a regional platform with personalized news.

Besides, even though the analysis of different forms of personalized news in the leading e-news publishers did not include research of the presence of geo-targeted editions, that is front page content tailored according to the regional location of the visitor identified via IP address or other automatically gathered user data, it did confirm the possibility of explicit tailoring of the front page of the portal 24sata.hr based on user preferences. The results of the first part of the research confirmed differences in the application of personalized news in leading Croatian online news publishers respective to their thematic focus and orientation towards the targeted audience. Considering the fact that e-news publishers of general genre targeting national audience have largest and the most diverse news coverage compared to other analyzed categories of online news publishers, it was also confirmed that they produce the largest number of different forms of personalized news, as expected. In contrast to the stated category of e-news publishers, sampled units of e-news publishers targeting local audience in the observed period used only contextual recommendations for customizing the content according to the user preferences. On the basis of these observations it can be concluded that the leading Croatian online news publishers serve personalized content proportionately to the breadth of their targeted audience. In contrast to the expected results of the research of the utilization of personalized news by the leading e-news publishers of the general genre, the results of the research of customization of content by the leading e-news publishers of specialized genres brought surprising results. Even though the mentioned online news publishers report on a single specific topic and are tailored towards a targeted audience of similar preferences, it was confirmed that they used at least one method of personalization (88,8%), or a combination of both methods of personalization (62,5%). Analysis of publicly available documents on privacy policies of sampled e-news publishers yielded unexpected results in the context of transparency of informing the users of possible use of ANR (algorithmic news recommender) and customizing particular news suggestions on the basis of user data by the e-news publishers as well as the availability of the mandatory documents declaring the rights to personal data protection and rights to privacy in the electronic communications sector. Even though the General Data Protection Regulation has entered into force in all EU member states on May 25, 2018, and the user rights in the electronic communications sector in Croatia were already regulated by the Electronic communications act (OG 73/08, 90/11, 133/12, 80/13, 71/14 and 72/17), the analysis of publicly available privacy acts of the selected e-news publishers during the analyzed period the following omissions were observed in the context of their availability:

- complete absence of the privacy documents and cookie notifications of the web location mirovina.hr,
- part of privacy policies relating to cookie notifications with permissions on the web location mirovina.hr and srednja.hr are not presented before the user has gained access to the content,
- some e-news publishers (story.hr, elle.hr, sensa.hr, cosmopolitan.hr and roditelji.hr) have no visible subsections with privacy regulations on their web sites, instead, the user is provided with access to privacy policy on the web site of the proprietary company by means of a link withing the scope of the cookie notification,
- six individual e-news publishers (index.hr, net.hr, zagreb.info, sibenik.in, sbplus.hr and studentski.hr) present their privacy policies within a terms and conditions subsection rather than as a separate document.

Additionally to the stated results of research indicating lack of transparency of some of the leading e-news publishers in the context of availability of their official documents, some omissions in regards to the integration of personalization in the stated documents were noted as well. Informed consent and the right to an explanation are used as generalized expressions for the stipulations of GDPR. Articles 13 (2) (f), 14 (2) (g) and 15 (h) demand that the data subjects provide information on the existence of automated decision maker, including profiling as

regulated in the article 22 paragraph 1 and 4 and, at least in these cases, meaningful information on the logic used, as well as the relevance and predicted consequences of the stated data processing for the subject (Drunen et al. 2019). Besides that, the articles 22 (2) (a) (b) (c) of GDPR gives to the subject the right to refuse being subjected to the decisions based exclusively on the automated processing, including profiling, producing legal ramifications for the subject or similarly, affect the subject in a significant manner, unless explicitly permitted by the user, allowed the the laws of the Union or the laws of the member state to which the data processor is subject or that are required in order for the data processor and the subject to enter into contract (eur-lex.europa.eu 2021). Despite the stated, the results of the second part of the research confirmed presence of the term personalization in 50% of reviewed privacy policies, even though the results of the first part of the research revealed that 95% of analyzed e-news publishers in the covered period applied some form of personalized news. Besides that, in cases where personalization was explicitly mentioned, it is frequently unclear if the term is related to advertising personalization, news personalization or both. Noted examples of lack of transparency in the context of availability and informing on the application of personalized news in the policy documents of the leading online news publishers presents a particular problem, considering the fact that many users do not command basic knowledge of internet technologies not of the safety and privacy risks, implying that they are unable to protect themselves from the risks they do not comprehend (Zuiderveen Borgesius 2014).

## 7. CONCLUSION

The analysis of application of personalized news in the leading online news publishers confirmed widespread use of personalized news in the leading online news publishers in Croatia. But, even though the application of artificial intelligence allows for sophisticated algorithmic systems for news recommendation by which Croatian mainstream media can quickly and efficiently, implicitly, personalize news for the individual user, most, due to the cost of the stated systems, limit their offerings to explicitly personalized content and the most simple forms of personalized news of second generation. The research of the application of personalized news in the leading online news publisher has confirmed, as expected, the differences in the implementation of individual forms of personalized news relative to their thematic orientation and targeted audience orientation. The largest and the most diverse offering of personalized news is provided by the leading online news publishers of the general genre targeting national and regional audiences (mainstream media), while the leading specialized online news publishers, unexpectedly, use at least one form of news personalization. The results of the availability and content analysis of the privacy policy document of the leading Croatian online news publishers indicate lack of transparency of some e-news publishers pertaining to the application of the European regulatory system norms for personal data protection. Of particular concern is the complete lack of privacy policy documents and cookie notifications on some e-news publishers, as well as the lack of mention of the term personalization in the context of personal data collection in the contents of the privacy policies of the leading e-publications where implicit or explicit news personalization was noted. Additionally, even when personalization is mentioned explicitly, it is frequently unclear if the term is related to advertising personalization, news personalization or both. Observed examples of the lack of transparency in privacy policies in the context of availability and informing of the application of personalized news by the leading Croatian online news publishers particularly reduce the importance of informed consent and the right to explanation as fundamental stipulations of GDPR. In addition to the above, the results of this research additionally contributed to the verification of the assumption of many studies that the application of GDPR norms in relation to algorithmic transparency and responsibility, despite the efforts of its internationalization, can differ between the member states of the European Union.

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## E-LEARNING DURING THE COVID-19 PANDEMIC

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### **ABSTRACT**

*Education responses to the ongoing COVID-19 pandemic have involved various distance learning solutions and adaptations. This paper builds on existing research into education and online learning during the COVID-19 pandemic by examining the current challenges and opportunities for digitalisation of the teaching process worldwide. It provides an overview of existing digital solutions for distance learning, describes how they have been implemented and how they have affected access to education. Drawing on data from scientific and professional literature, the author conducts an in-depth analysis to identify the most common e-learning strategies deployed during the COVID-19 pandemic. Conclusions are drawn on the advantages and limitations of e-learning, in terms of its effectiveness, and its role in enhancing education in the future.*

**Keywords:** COVID-19, digitalisation, e-learning, education

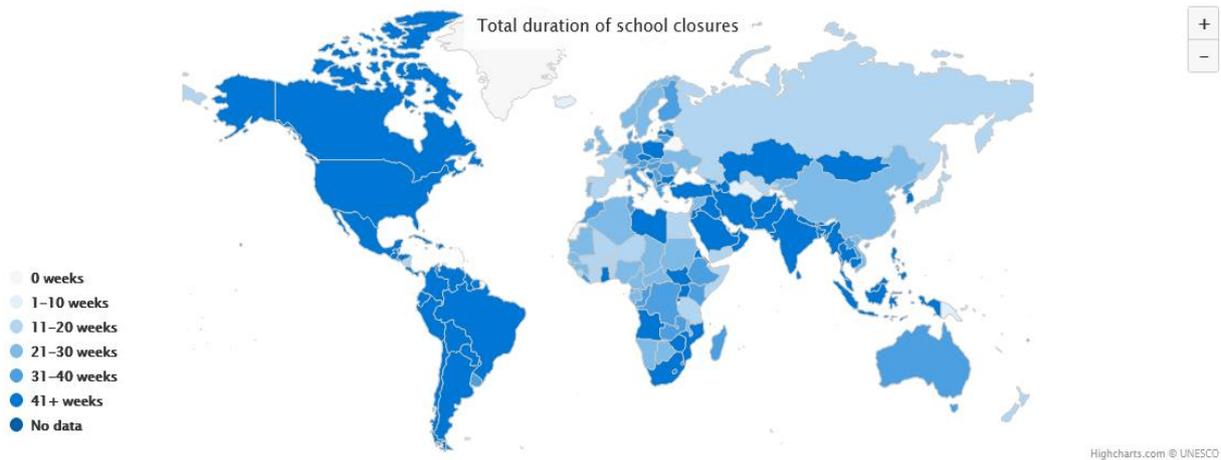
### **1. INTRODUCTION**

To contain the spread of the COVID-19 pandemic, various measures had been imposed worldwide, such as restrictions on gatherings and social distancing. Schools were also affected as they had to suspend classes or close their premises entirely. At the peak of the outbreak, almost 1.6 billion children in 195 countries across the world could not attend classes due to the lockdown (Data.europa.eu, 2021). According to the EU open data portal, extended school closures have been found to reduce learning opportunities for students and may produce negative psychological effects. Fortunately, the closing of schools did not put a stop to education, but it has changed it. To ameliorate the effects of closures, schools have been pursuing a variety of distance learning strategies and approaches to ensure the continuity of education. Currently, technology such as online courses, massive open online courses (MOOC<sup>1</sup>), and electronic textbooks are used whenever possible for the delivery of distance learning all over the world (Data.europa.eu, 2021). According to UNESCO, one year into the COVID-19 pandemic, half of the world student population was still affected by partial or full school closures, and more than 100 million children were predicted to fall below the minimum proficiency level in reading because of the pandemic. Only 20% of countries had funding for e-learning before the pandemic. It should also be noted that since the outbreak of the pandemic, UNESCO has been monitoring global closures of educational institutions and learning loss caused by the pandemic, as shown in Figure 1 (UNESCO, 2021).

*Figure following on the next page*

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<sup>1</sup> Massive Open Online Courses



*Figure 1: Duration of full and partial school closures in weeks  
(Source: UNESCO, 2021)*

However, the purpose of this paper is not to restate UNESCO data but to review relevant scientific articles and give an overview of research results presented therein with the aim of establishing the magnitude and scope of the impact of the COVID-19 pandemic on e-learning. The paper seeks to investigate the challenges faced by educational institutions, possible curriculum adjustments and new guidelines for teachers and heads of these institutions on how to successfully replace classroom-based learning with e-learning. Furthermore, the author seeks to determine the size and scope of e-learning implementation across countries around the world and discusses the possibility of e-learning replacing traditional learning in the future. A review is conducted of articles from the following science and technical databases: the ACM Digital Library, Current Contents/Web of Science, IEEE Xplore, Scopus and other sources available online.

## 2. REVIEW OF ARTICLES

The paper examines education and e-learning during the COVID-19 pandemic by reviewing the following science and technical databases:

- ACM Digital Library(Library, 2021),
- Current Contents/Web of Science(Science, 2021),
- IEEE Xplore(Xplore, 2021),
- SCOPUS(Scopus.com, 2021).

The listed databases were searched using a predefined query containing the keywords from this paper. The search included articles that were published since the outbreak of the pandemic until the time of writing the paper (November 2021). The following query was used:

Query 1 : covid\* AND education AND online

The query was used to search titles of articles in the science and technical databases listed above. In addition, other online sources (such as dissertations, case studies, etc.) that deal with the topics of education and e-learning during the COVID-19 pandemic were used.

### 2.1. Running of the query

The largest number of results was obtained from Current Contents/Web of Science, followed by SCOPUS, IEEE Xplore and the ACM Digital Library. The exact number of results obtained is shown in Table 1.

Database	Q1
ACM Digital Library	7
Current Contents/Web of Science	396
IEEE Xplore	28
SCOPUS	373

Table 1: Results obtained for the query by database  
 (Source: Author)

The obtained results were reviewed and compared to eliminate duplicate results, i.e. to remove scientific, conference and other papers indexed in multiple scientific databases. It should be noted that the query returns only those results that fully cover the chosen research area. This is concluded based on the reviewed keywords and abstracts of the papers returned from the search. Likewise, the largest number of articles about e-learning during the COVID-19 pandemic are indexed in Current Contents/Web of Science and SCOPUS database. Authors Allen, R.M., Bista, K. and Chan, R.Y. have 3 articles each indexed in SCOPUS; authors Abuhammad S, Abuhammad SAWSAN, Ahmed S, Singh J, Yang J and Zhang Y have 3 articles each indexed in Current Contents/Web of Science, while Flores, M.A. has 3 articles indexed in Current Contents/Web of Science and SCOPUS. The largest number of published articles on e-learning during the COVID-19 pandemic are from the United States (58), followed by China (47) and India (35). The number of published articles by country is shown in Figure 2.

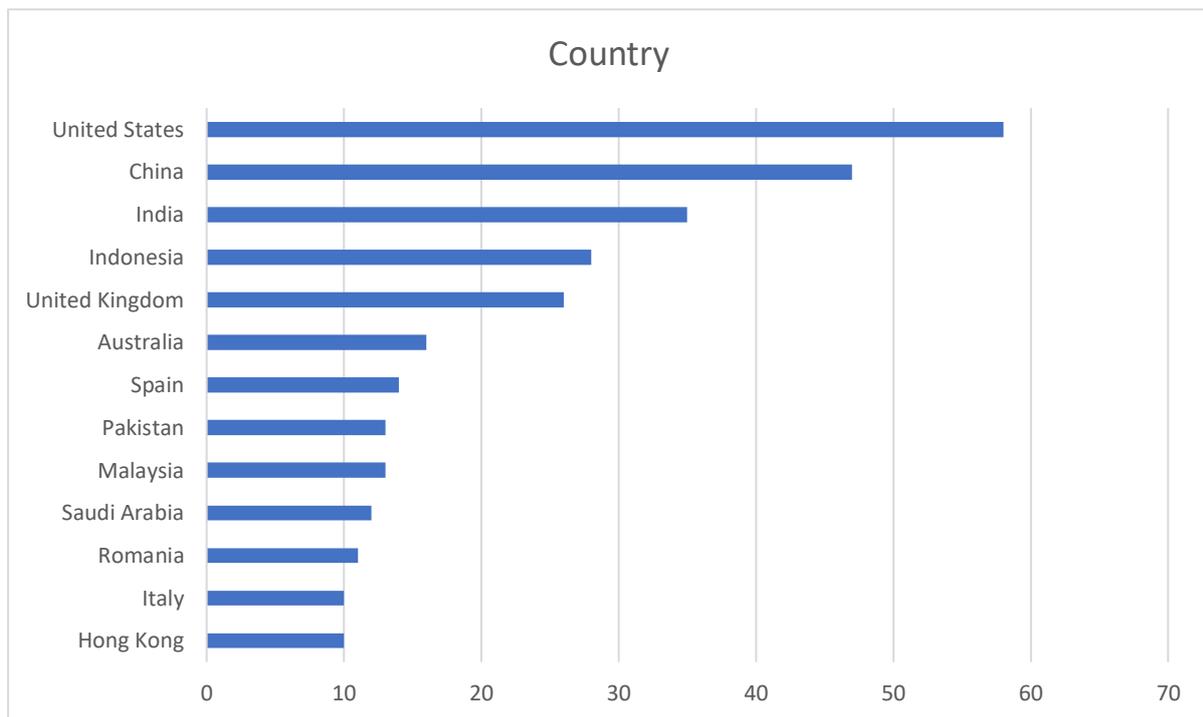


Figure 2: Number of published articles by country  
 (Source: Scopus.com, 2021)

The returned results include scientific articles published in journals, conference papers, books and other types of documents and works. The largest proportion of works is made up of articles published in journals (269, 72.1%) followed by conference papers (52, 13.9%). The number of results returned categorised by type of work is shown in Figure 3 below.

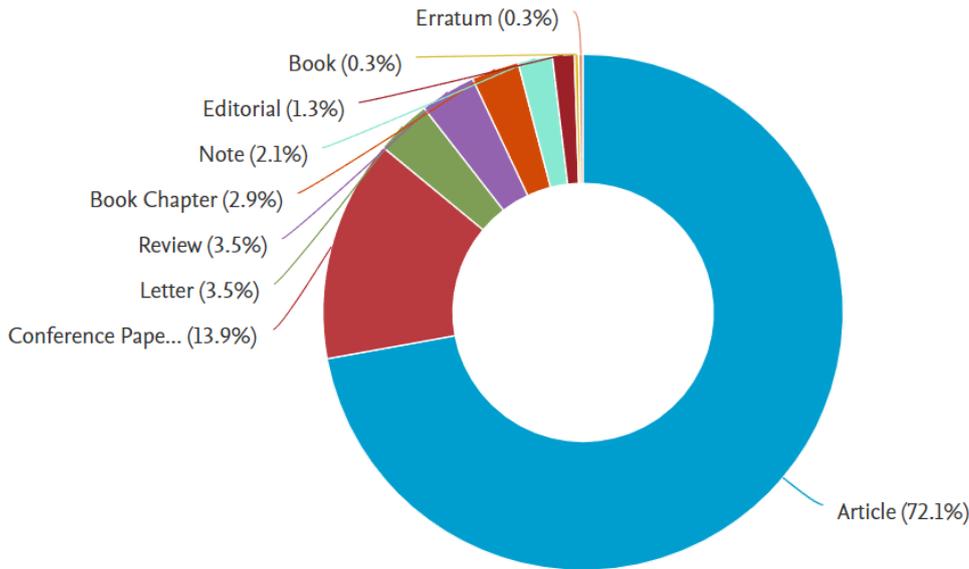


Figure 3: Search results by type of work  
 (Source: Scopus.com, 2021)

The SJR indicator<sup>2</sup>(Rank, 2021) for the first ten highest-ranking journals in which works on e-learning during the COVID-19 pandemic were published ranges between 9.3 (journal: Developmental Review) and 18.4 (journal: Review of Educational Research). Figure 4 shows the SJR indicators of the first ten highest-ranking journals that published articles on e-learning during the COVID-19 pandemic.

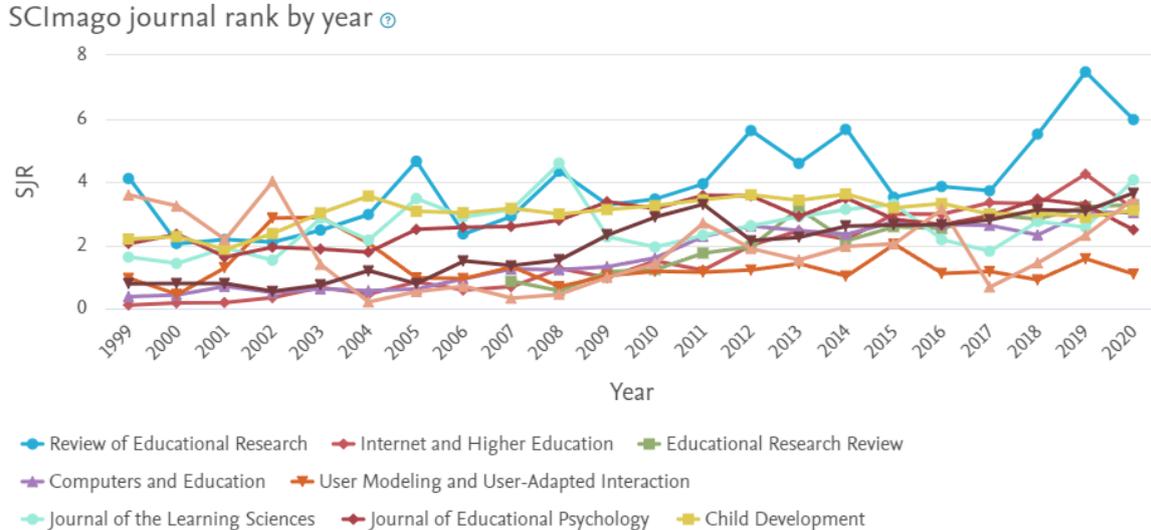


Figure 4: SCImago journal rank by year  
 (Source: Scopus.com, 2021)

For the period 2017-2020, among the listed journals, Computers and Education had the highest number of source citations - 11,296 (in 2021 – 28,224 source citations), followed by Child Development with 7,060 source citations (in 2021 – 36,009 of source citations), while the remaining journals received less than 2,800 source citations. The number of source citations for these ten journals is shown in Figure 5.

<sup>2</sup> SCImago Journal Rank (SJR) uses metric indicators to show the average number of weighted citations during a year per document.[7]

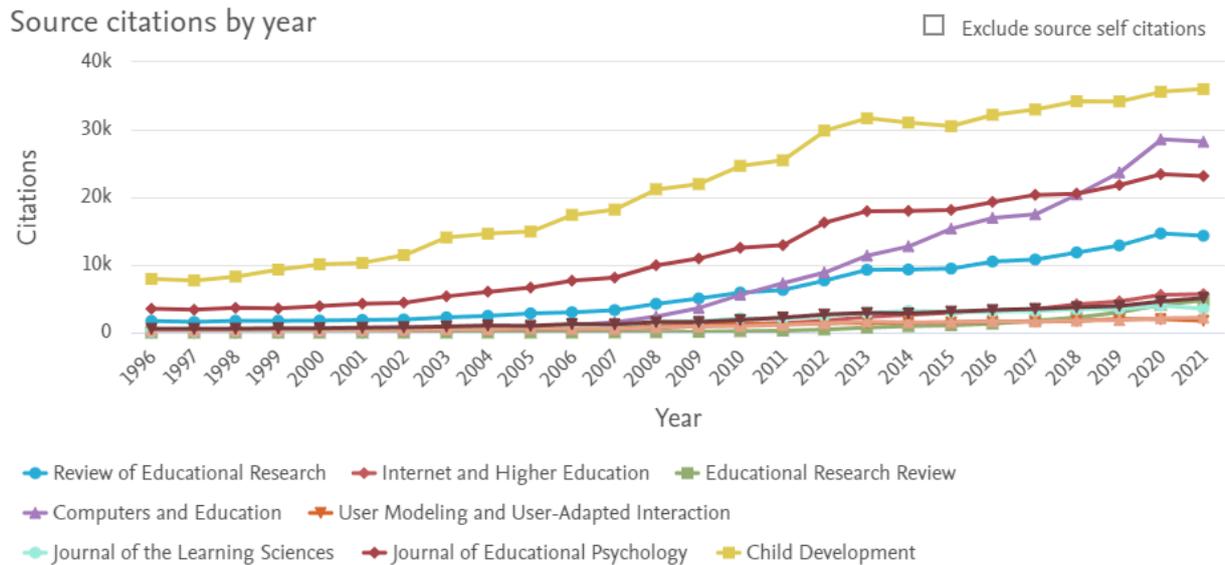


Figure 5: Source citations in the first ten journals according to SCImago ranking  
(Source: Scopus.com, 2021)

Following the initial research of e-learning during the COVID-19 pandemic, the paper looks at the vital importance of online-learning during the pandemic, the scope of digital transformation of education and use of new technologies and innovations in education with the aim of determining the effects they have produced, and in particular the negative impacts of education disruption on student learning. To this end, the author has created query 1 and then reduced the number of returned works to 21 articles shown in Figure 6 by reading the titles, keywords and abstracts. The results obtained are summarised and the conclusions are presented in the final chapter.

Figure following on the next page

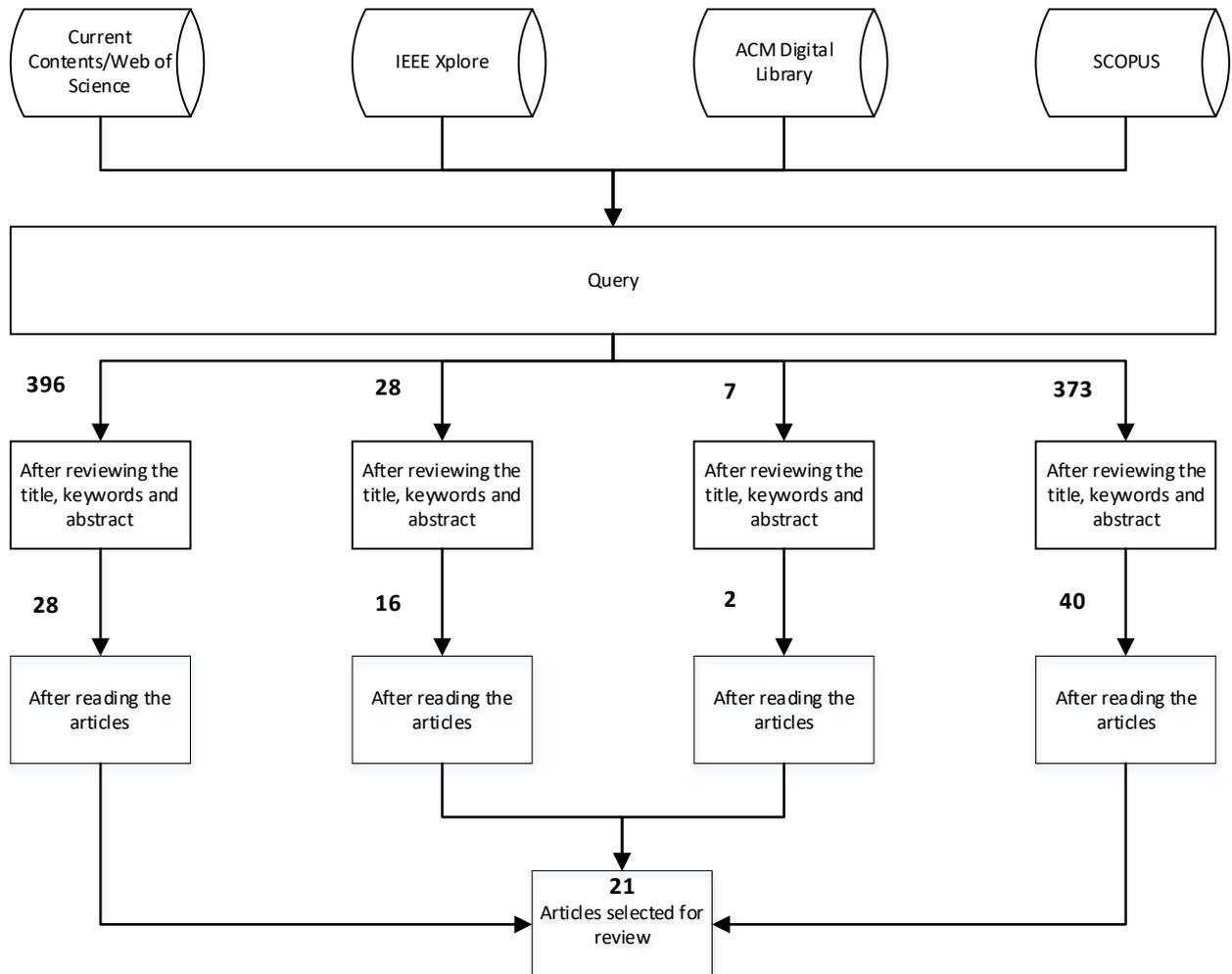


Figure 6: Article selection process  
 (Source: Author)

## 2.2. Research methods

To collect data for their research (Tuah and Naing, 2021, Toader et al., 2021, Singh et al., 2021, Ramírez-Hurtado et al., 2021, Peimani and Kamalipour, 2021, Jiang et al., 2021, Gómez-Rey et al., 2021, Chu et al., 2021, Butnaru et al., 2021, Zheng et al., 2020, Xue et al., 2020, Xie et al., 2020, König et al., 2020, Kim, 2020, Kidd and Murray, 2020, Demuyakor, 2020, Chen et al., 2020b, Chen et al., 2020a, Carrillo and Flores, 2020, Al-Fraihat et al., 2020), the authors of the reviewed works compiled a survey questionnaire eliciting the participants' opinions about e-learning and the likelihood that online teaching will continue to be used in the post-COVID-19 era. The second method used was a semi-structured interview. The questions were pre-determined, however this technique allowed the interviewer to probe the respondents and explore new topics and ideas which is not possible using a structured interview or a questionnaire. In a semi-structured interview, the interviewer asked similar questions in a similar order so that a comparison could be made of their answers. The interviewer encouraged respondents to share their views and experiences, even if their shared experiences and views may be left out from the research. The third method used was a standardised interview wherein the respondents were asked specific questions in a set order and in a set manner. The fourth method was case study. The fifth method mentioned in one the analysed articles (Kamysbayeva et al., 2021) is the "blinded for peer review" method, which allowed students to discuss and compare personal e-learning experiences during the COVID-19 pandemic (Tuah and Naing, 2021, Toader et al., 2021, Singh et al., 2021, Ramírez-Hurtado et al., 2021, Peimani and

Kamalipour, 2021, Jiang et al., 2021, Gómez-Rey et al., 2021, Chu et al., 2021, Butnaru et al., 2021, Zheng et al., 2020, Xue et al., 2020, Xie et al., 2020, König et al., 2020, Kim, 2020, Kidd and Murray, 2020, Demuyakor, 2020, Chen et al., 2020b, Chen et al., 2020a, Carrillo and Flores, 2020, Al-Fraihat et al., 2020).

### 2.3. Analysis of research about e-learning during the COVID-19 pandemic

This section summarises the main and, in the author's opinion, most valuable results of the analysis of the selected articles based on which conclusions are drawn in the final chapter. Not all selected articles are discussed. The articles whose results were summarised were selected using a bibliometric analysis whereby the size of clusters of the co-occurrences of related keywords is measured (Van Eck and Waltman, 2021). Two clusters stood out containing the following keywords: (1) COVID-19, higher education and learning, (2) online learning, satisfaction. The combination of related keywords from these two clusters formed the basis for the selection of articles to be used to analyse and make conclusions about the differences between traditional learning and e-learning, the impact of the COVID-19 pandemic, and the satisfaction of participants in the educational process. The obtained results are shown in Figure 7 below.

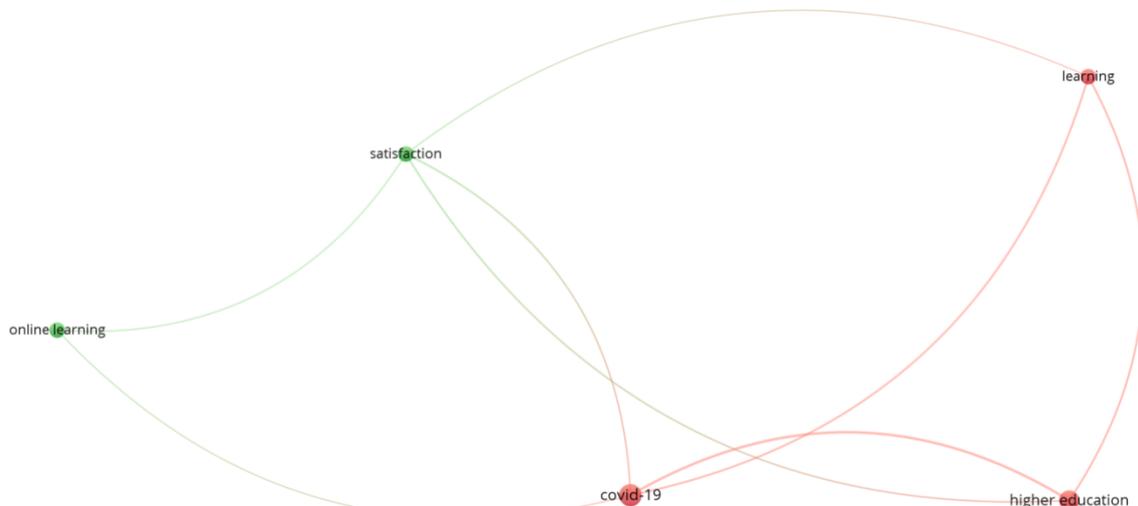


Figure 7: Co-occurrence network of keywords of the analysed articles  
(Source: Author)

The results obtained by the authors Jiang et al. (2021) show that Chinese university student satisfaction with e-learning platforms is related to the students' perception of ease of use of these platforms. The results of their works also show that regional differences between eastern and western Chinese universities determine the way in which perceptions of use are interconnected and conclude that e-learning is recognised as a vital teaching delivery method during the COVID-19 pandemic. (Jiang et al., 2021) Based on their research, authors Toader et al. (2021) conclude that teaching staff and students have successfully adapted to online teaching and learning during the COVID-19 pandemic and ensured the continuity of teaching and learning in the past two academic years. (Toader et al., 2021) Research by Xue et al. (2020) reveals various e-teaching methods have been used: live synchronous teaching using ZOOM, ClassIn, CCtalk, Rain Classroom and Tencent Classroom platforms, as well as an asynchronous teaching method that involves pre-recording and posting teaching videos, online flipped classroom teaching method, and a teaching method which involves pre-recording short videos which students can watch before they come to class to learn independently.

In class, teachers deliver live lessons or address students' problems live online before class to help them with independent learning, using short videos, or create opportunities for students to engage with each other, discuss and collaborate online. After class, students finish their homework or take a test, and the teacher gives instructions asynchronously. (Xue et al., 2020) In addition to exploring online education delivery methods during the COVID-19 pandemic, the authors Xue et al. (2020) highlight the following disadvantages: insufficient information technology infrastructure in rural and remote areas, uneven distribution of quality education resources and quality teacher resources, weak learning interaction and poor learning effects. Finally, they conclude that IT literacy and information-based teaching and learning ability of teachers and students should be improved.(Xue et al., 2020) In their research, Tuah and Naing (2021) focus on the comparison of online and traditional assessment methods during the COVID-19 pandemic and propose two key strategies for managing online examination: 1) creating online questions adapted to online assessment using various software tools, 2) using free video conferencing tools as CCTV on students' mobile phones. (Tuah and Naing, 2021) The results of research conducted by Ramírez-Hurtado et al. (2021) highlight five dimensions that are underrepresented and thus hinder better e-learning during the COVID-19 pandemic: interaction among students, student concentration in online classes, student satisfaction with assessment and online test review system and methods of conducting them, e-learning system usefulness and ease of use, and finally, the diversity of assessment activities in an online environment. (Ramírez-Hurtado et al., 2021) A survey of 400 respondents undertaken by Chu et al. (2021) found that interaction between students and the design of the course delivered have the greatest influence on student attitude and behaviour. (Chu et al., 2021) The results of research by Butnaru et al. (2021) indicate that students react differently to e-learning. It was found that their reaction is based on their proficiency in using online tools, their ability to access online courses and the way teachers carry out the teaching activities in an online environment.(Butnaru et al., 2021) An investigation by Chen et al. (2020a) shows that the availability of online platforms for e-learning has the greatest influence on student satisfaction. They conclude that problems with online education platforms should not be ignored and that the two-way interaction between students and teachers must be improved.(Chen et al., 2020a) Peimani and Kamalipour (2021) underline key challenges such as the development of core professional qualities, including communication, interpersonal and practical skills, along with the integration of carefully selected Internet technology to most effectively redesign teaching activities and maximise student engagement.(Peimani and Kamalipour, 2021) Demuyakor (2020) conducted a survey of the perceptions of Ghanaian international students in China and drew the following conclusions: the implementation of online learning programmes was an excellent idea because the majority of the students surveyed supported the initiative. The results show that due to the COVID-19 pandemic non-native students spent a lot of money to buy online data for e-learning. Demuyakor also found that Internet connectivity was slow in the dormitories of various universities in China.(Demuyakor, 2020)

### **3. CONCLUSION**

The COVID-19 pandemic has significantly altered education delivery worldwide, which has affected both teachers and students. It is still unclear how COVID-19 pandemic will affect education practices in the future. Learning and teaching in an online environment is becoming an essential method of education delivery. In the long run, permanent, positive changes in education can be implemented as digitalisation brings with it innovations and new technologies such as new educational software and various online learning platforms. The reviewed articles suggest that for students from low-income families in rural regions, reliance on e-learning can limit opportunities for and access to effective education. In addition, the need to pay for Internet data to be able to access e-learning also exacerbates learning inequalities.

Another challenge to the education system posed by the pandemic is how to conduct online examinations. This will require changes to examination procedure and adaptation to online proctored exams. A wider range of possibilities to monitor pupils and students during tests should become available. There should be E-learning platforms should be user-friendly and provide for two-way interaction between students and teachers in an online environment. The capacity of both students and teachers to use the ICT tools effectively should be improved. It is too early to draw definitive conclusions about how reliance on e-learning during the COVID-19 pandemic has affected education and whether inequalities exacerbated during the pandemic due to lack of tools or access needed to keep on learning has had significant consequences for the quality of education received. However, lessons learned during the COVID-19 pandemic should be used to inform future initiatives aimed at developing an adaptive and equitable education system.

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# HOW NEW OFFERINGS IN ONLINE EDUCATION AFFECT THE BUSINESS MODELS OF HIGHER EDUCATION INSTITUTIONS

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## **ABSTRACT**

*Over the last decade, distance education offerings such as “MOOCs” (Massive open online courses) have evolved from a niche market to the mainstream. This development is not only affecting students’ everyday life’s but is also increasingly affecting the providers of higher education. An increasing number of institutions are developing and/or including online courses into their curricula. This ongoing development leads to big changes in the strategy of traditional brick and mortar higher education providers and raises the question what this means for their business model? The article presents the results of an extensive review of the literature on distant learning offerings and shows how they are affecting the future business models of universities and other higher education providers. To archive this, we have searched the research database Scopus with a set of different keyword combinations and analysed all papers that were relevant to our research question. Our results show that the supply of online based higher education courses has continuously increased. The spectrum reaches from simple streaming of lectures to the establishment of whole master’s degree online programs. Most importantly, we observed that in recent years top-ranked universities were able to increasingly make use of their reputation and take over a considerable market share. Interestingly, more and more universities are including MOOCs from those providers into their standard curricula, unknowingly changing their role from creators to “retailers.”*

**Keywords:** *business model, digital transformation, higher education, MOOCs, online education*

## **1. INTRODUCTION**

Distance education offerings have evolved from a niche market to the mainstream (Yousef et al. 2014). For the last two decades, the whole field has been growing constantly and is forcing more and more players in higher education (HE) to take action (Anderson et al. 2018). Particularly, with the upcoming of MOOCs since the last decade the market has been subject to big changes (Daniel et al. 2015). Since the outbreak of the covid-19 pandemic the development and implementation of online education has been boosted additionally (Chakraborty et al. 2021) and forced also brick and mortar universities (traditional, in person) to invest into infrastructure for online education (Ali 2020). Previously, online education was mostly designed as standalone online courses open for everyone and mainly set up as non-profit applications (Daniel et al. 2015). However, recent developments led to a wide variety of courses and study programs established by different providers and often focused on generating profit (Daniel et al. 2015). In this sense, free online education offerings like “MOOCs” (Massive Open Online Courses) have been caught up by the economic reality. Instead, more and more large platforms such as edX, Coursera and Udacity fight for market shares and try to establish a sustainable and profit-oriented business model. As a consequence, many traditional HE institutions are called on the scene to start their own offerings in online education or to find new ways to handle this development.

Therefore, the question arises: How will recent developments in online education affect the education institutions, the students and the relevant policies? Furthermore, we investigate into the changes of the higher education market and we ask the question how the business models of higher education providers will be changed. In our study we conducted an extensive literature review, investigating 48 articles in detail. Our results indicate that top universities are able to make more and more use of their reputation and take over the lion's share of the higher education online market, while smaller universities might be degraded from creators to retailers in the not so past future. In the subsequent manuscript, we present preliminary results of this literature review.

## **2. METHOD**

To answer these questions the chosen method is the extensive literature review. In this way it was possible to get a great overview on the research that has been done in this field. The scientific database "Scopus" has been searched extensively for all relevant publications on the topic and the articles were screened for their scientific findings. By doing so a significant review on the results of over 150 papers can be given, which provides a very substantial picture over the state of knowledge and expectations for the future in this area.

### **2.1. Article research**

To find the most relevant articles we carried out a search query at the "Scopus" database. This database has been chosen due to its frequent use of in our field, and it provides a wide range of high-quality papers. Compared to other search engines such as "web of science" or "google scholar" the results of "Scopus" were more consistent and provided the most relevant articles related to our research question. All articles had to comply with the following restrictions:

- EBSCO Business
- Source Premier
- Peer-reviewed
- English
- 2010 – 2022

The following search syntax was used to search the databases:

```
TITLE-abs-key ( ( ( ( ( online OR distance) AND ( teaching OR "course*" OR "class*" ) ) AND ( "higher edu*" OR "universit*" ) ) OR mooc* ) AND ("business model" ) )
```

By using this term, we ensured to only filter for articles that relate to online education combined with business model as well as with a relation to HE in the title, the abstract or the keywords. By using this method, we received a portfolio of 161 articles that related to our research question. However, a hands-on experience paper selection was required to filter the relevant articles.

### **2.2. Paper selection**

The collected articles went through a further selection process, based on the relevance of the article for the research field. To archive this we went through title, keywords and abstract in detail. In case the relevance was not clear at this point, we went through the whole article. For the selection process we asked the following questions:

- Does the article deal with the topics raised in the research questions?
- Does the article deal with challenges or potentials for HE systems or individual disciplines?
- What determines the structure of the supply side?
- What determines the structure of the demand side? (Who uses it? In what form?)

- Does the article show pros and cons or challenges?
- Does the article relate to changes in the business model of HE providers?

This process led us to a final portfolio of 48 articles which are all covering relevant research for this literature review and formed the basis for this paper.

### **2.3. Paper evaluation**

All the selected articles were studied in detail and the most sophisticated findings, concerning the changes of the HE ecosystem, stemming from distance education, were included in our paper. We also compared the findings to the other articles from our database. This way we can show where the existing research results are consistent and where inconsistencies can be found. We also studied the sources named in the articles we were working on. If these sources were relevant for our paper, they were also included. To enhance the reading experience and furthermore to get a good overview we followed the guidelines for writing literature reviews by Webster and Watson (2002) shown in their article and Feak and Swales (2009, 10 ff) given in their book. Webster and Watson (2002) recommends to provide the observations from the literature separately and to give this observations either support or opposition based on other literature. This enables a coherent view onto the results, which can later be discussed in detail.

## **3. RESULTS**

In this section, we investigate to what extent the new online programs have consequences on the different stakeholders in the HE ecosystem. Accordingly, we examine the determinants of supply and demand before we delve into the pros and cons of online education. Finally, we study how the market structure changes and the implications for HE providers. To highlight the results, we decided to allocate them to separate chapters where we display out most significant observations. These observations are explained in great detail and supported by other sources.

### **3.1. Effects on higher education institutions**

The rising popularity of online education gives HE providers a lot of advantages, disadvantages and challenges. The most significant of the effects that could be observed by our research are listed in the following.

#### **Observation:**

Distant education offerings do in fact increase the student capacity of HE institutions significantly.

#### **Support:**

Specially in high demand programs universities in the past regularly struggled to fit their audience into their lecture halls. Particularly in such peak courses the universities already use MOOCs and other online education offerings to meet the demand. (Belleflamme and Jacqmin 2016; Burd et al. 2015) Kocdar et al. (2017) refer to different studies, which suggest that more than 40.000 students participate in an average MOOC course. This supports the hypothesis that education providers can massively extend their impact by using online courses. As this practice strongly increases the number of students. Furthermore, the cost per student can be cut down significantly, which leads to our next observation.

#### **Observation:**

The Costs & Revenues of Universities undergo sustainable change due to the increasing number of online education offerings.

**Support:**

Even though online concepts do not fit every kind of lecture and can be very costly to be produced (Burd et al. 2015), online courses are able to cut down total costs in the long run (Belleflamme and Jacqmin 2016; Burd et al. 2015; Kocdar et al. 2017). This leads to the opportunity of lowering the prices of individual courses or even whole programs (Belleflamme and Jacqmin 2016). But such revenues are not guaranteed. In 2004 most HE institutions in UK expressed doubt in regards to the cost effectiveness of their online offerings (Steinberg 2004). In the last decade investments in the production of online education offerings became more widespread as experiences grew. Nowadays most of the education institutions are expecting a return on their investments (Marty 2014, p. 112). These return on investments can variate widely depending on the organizational structure of the online programs and on the involved parties (Steve Kolowich 2013; Niederman et al. 2016)

**Observation:**

Using online education tools rewards the provider with a wide range of didactic advantages.

**Support:**

Langen and van den Bosch (2013) and Clarke (2013) name different advantages such as flipped classroom approaches, advanced tools for students to work with and to create analyses (Burd et al. 2015). Furthermore, students profit from a broad range of options to participate in exercises. Another benefit lies within the ability to build small groups of students with ease compared to in class group formations (Kocdar et al. 2017). Similarly, online teaching units could be mandatory before students are able to enter their original, in person degree program. This way a similar level of skills and knowledge for all students can be guaranteed (Burd et al. 2015). However, this should not imply that virtual environments always overrule in person teaching. It can be challenging to build up connections between students and teacher and students. (Mehmood et al. 2017). All kinds of perquisites can be challenging and performance control can be a common issue (Ossiannilsson et al. 2016).

**Observation:**

Online education offerings can increase awareness for online education in the public and open new markets.

**Support:**

Burd et al. (2015) and Niederman et al. (2016) state that national and international awareness can be created by using different methods of online education. Especially high reputation schools such as Harvard or Stanford already made use of publicly available online courses and MOOCs to reach many people and enhance their education. However, this practice is not limited to universities with a high reputation. Burd et al. (2015) also states that such big online courses can be used to locate new markets among the users of these public courses. This information opens up the possibility for further marketing campaigns and to identify new target groups. Studies such as the work of Chakraborty et al. (2021) and Bertheussen (2020) show that these online courses reach very different target groups than traditional HE. Later on, these students can be drawn into traditional brick and mortar universities as they are already familiar with the offerings. But it might also work the other way around. Online post graduate programmes allow alumni to stay in touch with universities by attending said programs. (Donnelly et al. 2013)

**Observation:**

The authors who are doing research on online education and MOOCs cannot give a consistent prediction whether traditional HE will be substituted by online education offerings.

**Support:**

Belleflamme and Jacqmin (2016) are raising the question if online education offerings and MOOCs will be competitors for traditional HE institutions or if they will just act as supplements to traditional degree programs. They give different assumptions in their articles but cannot identify a clear trend. De Langen and van den Bosch (2013) are raising the same question in their article but argue, that MOOCs will be no direct competitor for degree students. Other actors, such as Niederman et al. (2016) are more worried about the risk, that new online offerings may not recruit new students into the programs but only cannibalize students from other programs. From an economic perspective, new offerings would only add new costs without adding new revenues. Generally, the evaluation of the impact of current developments on the market for HE turns out to be very diverse. Some researchers see it as an evolution of traditional learning models or a hype that will fade away, while others forecast the disruption of the whole sector and predict the end of universities (Kocdar et al. 2017; Sharrock 2015). According to Mamaeva et al. (2020) a new education system is forming where the primary source of knowledge is online learning. This digital transformation of the HE systems offers perfect conditions for building new business models and allows to improve the standard of student's knowledge. Different studies, such as Steinberg (2004) have already worked out different types of business models for the future of HE organizations.

**Observation:**

Traditional HE providers need to have a solid market strategy and a clear area of expertise.

**Support:**

As geographical issues are getting less important and student loyalty for special universities is decreasing (Pedro et al. 2016) the need for a research and market strategy becomes absolutely essential. The traditional multipurpose university with a wide range of different research areas and a range of degrees becomes outdated according to Donnelly et al. (2013). They do recommend that each HE supplier needs to be clear which niches or market segments it wants to serve and how to avoid being outran by its competitors.

**Observation:**

Offering high quality online education requires new expertise and different resources.

**Support:**

Expertise for creating online course content has to be acquired and established by the HE institutions (Belleflamme and Jacqmin 2016) and teachers must be aware of new challenges in online HE (Burd et al. 2015). Also, the time and resource consumption need to be taken into account for the production and supervision of the courses. This way the faculty's attention is diverted from other responsibilities if no extra staff gets hired. (Ortagus and Tyler Derreth 2020).

**Observation:**

HE providers ask themselves the question if they should produce and host their online courses themselves or if outsourcing the whole topic would be a viable option.

**Support:**

Using an existing MOOC provider has several advantages for a HE institution. For instance, it is cheaper than setting up and operating an own technical platform and it allows access to a large pool of registered users (Belleflamme and Jacqmin 2016; Clarke 2013). On the other hand, when contracting MOOC providers, the lack of in-house skills is critical (Steinberg 2004) and costs associated with publishing on existing MOOC platform need to be considered (Burd et al. 2015). Further objections like the fear that MOOC providers might want to maximize their profits by driving down their costs, which can be detrimental for the quality of online courses. Additionally, the potential loss of autonomy and control, concerns regarding data security and potential job loss need to be taken into account (Steinberg 2004). MOOC providers obviously try to overcome these threads and offer HE providers goodies to guide them to their platforms. Coursera for example offers a guaranteed number of students subscribed into courses and a fixed share of the revenue as an incentive for risk averse universities (Steve Kolowich 2013).

**3.2. Effects onto Students**

Probably the biggest changes hit the students of HE institutions. On the one hand they are the drivers of change themselves, as they are changing their behavior and their needs. But on the other hand, they are also affected by changes outside their sphere of influence.

**Observation:**

Online education generates a lower threshold for HE, especially through MOOCs.

**Support:**

MOOCs can reach many people who are not familiar with the HE system. As the offering of MOOCs is usually free, it is also attractive for people with a limited budget (Langen and van den Bosch (2013) and Sharrock (2015)). This also creates opportunities for students from regions where the HE offerings are very limited, including development countries (Niederman et al. 2016). Another target group, that is gaining in importance are digital natives and millennials, who grew up with the expectation that a sophisticated and dynamic learning environment should be accessible anywhere and anytime (Mehmood et al. 2017). The increased flexibility is also a big factor increasing the low threshold for MOOCs, as they are usually not live, it is possible to do the lectures any time (Kocdar et al. 2017; Mehmood et al. 2017). Although the students appreciate the flexibility of MOOCs, there are other needs that must be fulfilled.

**Observation:**

Students want to experience a campus in-person, not just virtually.

**Support:**

Among others Niederman et al. (2016) states that students, even though they appreciate the advantages of taking online courses, they also want to have a "on-campus" experience from time to time. This way they feel connected to their education institution and do not break up during a degree program. Which leads to the next observation.

**Observation:**

Research shows that the dropout rate in online degree programs is significantly higher than in traditional education.

**Support:**

According to Bornschlegl and Cashman (2019) and Lee and Choi (2011), the number of Students who are quitting during a degree program is significantly higher in online education than in traditional brick and mortar University programs. One reason for this might be the lower threshold for entering the courses, but still to identify significant factors is not an easy task according to Bornschlegl and Cashman (2019). However, they recommend that entertaining courses, online course quality and aesthetics can increase the satisfaction of students for online education, which could lead to a higher remain rate. MOOCs need to be designed to be attended with less or different support, than in traditional HE and realistic and cost effective support and guidance procedures must be developed (Burd et al. 2015).

**Observation:**

Online education offerings are usually much cheaper than traditional HE offerings. In some cases, even for free.

**Support:**

Similar to branches like music, video, books and newspapers, the overall expectation of consumers is that online offerings should be free (Cusumano 2014). This leads to a wide range of problems, as soon as the offerings are expected to be self-funding. This is critical as lots of these offerings start as promotion for traditional education providers but they are more time consuming and costly as expected (Burd et al. 2015; Steinberg 2004). Still the expansion of online education means lower costs for students and institutions over all (Belleflamme and Jacqmin 2016). And as the offering of MOOCs is often free, as explained earlier, it is also attractive to people with a limited budget. This is especially true for students from developing countries. (Langen and van den Bosch 2013; Sharrock 2015; Niederman et al. 2016).

**3.3. Concerning the Public Policy**

The changes in the HE sector, based on the increasing presence of online education is also affecting the public policy in several areas.

**Observation:**

The funding of online education offerings and MOOC platforms must be discussed by public authorities.

**Support:**

Belleflamme and Jacqmin (2016), Vazquez et al. (2019), Porter (2015) and others, discuss the role of online education offerings in the future and the public interests for such offerings. This is not only a rational question but also it strongly depends on the cultural background of the country. For example, in Europe where there is a persistent tradition of public funding of HE, the situation is quite different from the Anglo-American area where HE is much more market driven and privately funded. In Europe most online HE offerings are university based, as they see this topic as a part of their educational mission. These offerings are usually free and open to everybody but are usually seen as an add-on to the traditional course program. But this might not be enough for the future of education. A structured implementation of online degree programs and fixed standards for online curriculums will be necessary to develop sustainable outcomes (Jones 2015). In the Anglo-American HE sector, most online education offerings are based on big MOOC platforms who are semi-independent and are strongly market driven. Large platforms such as edX, Coursera and Udacity fight for market shares and try to establish a sustainable business model (Sandra Sanchez-Gordon and Sergio Luján-Mora 2014).

Both approaches do have advantages and disadvantages and public policy needs to set standards and guidance for this development.

**Observation:**

Authorities need to define legal frameworks for online courses and degrees.

**Support:**

So far accreditation and quality control for online education is not evenly developed yet. The regulation of HE institutions is still pen and paper based (Belleflamme and Jacqmin 2016). The legal situation for European Universities is quite complex and individual, but as they are funded mostly by the public, standardization should be possible (Daniel et al. 2015). To allow online education to become a substantial part of HE and to develop supply and range, not only the accreditation of completed courses and degree programs has to be standardized but also the staff who is creating the contents needs to be rewarded and quality criteria needs to be standardized (Jones 2015). A legal framework would also promote the use of innovative teaching approaches like MOOCs, but so far many curricula still do not allow online application and MOOCs to be implemented into teaching (Belleflamme and Jacqmin 2016). This is also important to ensure uniform quality indicators, quality policies and practices in order to ensure the quality standard of courses and to ensure the reputation of the institutions (Burd et al. 2015).

#### **4. DISCUSSION AND IMPLEMENTATION**

When MOOCs were first established at the beginning of this millennium, many researchers and insiders believed that the end of traditional universities was about to come. Why should a course from an ordinary university outclass a professional MOOC that was developed by the best teachers with the most sophisticated technical methods and tools? However, this prediction did not come true. Although, some MOOCs became very successful, the traditional brick and mortar universities are still predominant. Students still want to feel the connection to a real university and have the unique “on campus” experience, that cannot be given by online offerings. Nevertheless, the demand for HE online courses is constantly growing, and more and more HE institutions are forced to take action. This actions reach from HE providers offering whole master degree programs online, to universities who produce their own MOOCs, to increase their popularity and to high schools who instruct the professors to stream their lectures live and public. But, as our literature review reveals, in recent years, we observe a new trend. Some platforms (often partnered with world class universities like Harvard, Stanford or the MIT) introduced a new profit-oriented business model. They make use of their reputation and offer courses that – under certain conditions – can be included into the curricula of traditional universities. At first glance, this has diverse advantages for the buying universities: they can profit from the image of the providers, they can reduce costs, and might even offer better teaching quality. However, while the market share of those providers increases – reinforcing their already massive power and possibilities –, the buyers’ roles change dramatically. More and more, will see the necessity to use the online offerings of those honorable providers to successfully compete for students in a global contest. Simultaneously, in this context they knowingly or unknowingly minimize their role. If this development continues and the top-ranked Universities might be able to take over the lion’s share of the HE market, as they can reach students from all over the world, this would disintermediate smaller education providers to become “retailers” only. It is still not clear, how this development concretely plays out, but there is reason to believe that expected developments, mentioned at the beginning of this chapter, finally put into effect. But literature shows us a strategy, for not so honorable HE providers, to withstand this development. A nice content area has to be identified that is not already overpopulated, ideally in a discipline area with broad and international appeal.

The HE institution than must become a leading provider in this discipline area and needs to provide internationally competitive offerings for students. This education offerings ideally have an online education and a brick and mortar component to address all student's needs. These changes might be tough to oversee for traditional multipurpose university but are necessary to regain old strength and integrity. As our results implicate, this developments in the offerings do also have a strong impact into the business model of the institutions. The HE providers will have to decide which role they want to play in the future, and they will be forced to specialize their business models to sustain in a market that is getting increasingly competitive.

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# ECONOMIC ANALYSIS OF LABOR MARKET DISCRIMINATION: HOW DISCRIMINATION AFFECTS THE MARKET AND HOW TO RESPOND TO IT?

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## **ABSTRACT**

*After the World War Two, a concern regarding negative discrimination was raised. In the previous period, racial discrimination was widespread all over the world, especially on the European Continent that faced a huge wave of antisemitism, which raised awareness on the fact that people need to be legally protected against it. The first source of anti-discrimination law was the article 1, paragraph 3 of the United Nations Charter. The first target was to achieve equality between people in every field. However, another issue was highlighted after that, i.e. how to achieve equality on the labor market. On the European level the concern was directed towards gender equality and from 1957 and the Treaty of Rome equal pay between men and women was already required. Nowadays, the EU framework is mainly based on article 19 TFEU, directives and the EU Charter of Fundamental Rights. This paper deals with the theories of the discrimination on the labor market, namely how labor market discrimination is influencing the economy and individuals, together with the reasons why policies should be taken to eradicate discrimination within this market. After that, we will focus on different empirical studies namely how economy is influencing the two most important type of discrimination on the labor market i.e. discrimination based on gender and based on the ethnicity, race and color. In the last part, a special focus will be made on policies towards immigrants integration on the labor market.*

**Keywords:** *Anti-discrimination laws, Discrimination, Equality, Labour market*

## **1. INTRODUCTION**

After the World War Two, a concern regarding anti-discrimination law was raised. In the previous period of human history, racial discrimination was widespread, especially on the European Continent that faced a huge wave of anti-Semitism. As a result, this major event obviously raised awareness on the fact that people need to be legally protected on the international and on the European level. The first legal source that appeared regarding anti-discrimination law was on the international level, namely article 1, paragraph 3 of the United Nations Charter: "To achieve international co-operation in solving international problems of an economic, social, cultural, or humanitarian character, and in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion" (UN Charter). First target was to achieve equality between people in every field. However, another issue was highlighted after that, i.e. how to achieve equality on the labor market. On the European level, the concern was directed towards gender equality and from 1957 and the Treaty of Rome equal pay between men and women was already required.

After that, the first EU Directives appeared (1975), but it is only in 1997, with the Treaty of Amsterdam, that a general policy towards discrimination was set out. This framework took a new dimension with the Lisbon Treaty in 2009, which not only helped to converge international and European policies but also to strengthen legal security on this topic. Nowadays, the EU framework is mainly based on Article 19 of the Treaty on the Functioning of the European Union (TFEU, 2008), directives, and Article 21 of the EU Charter of fundamental Rights (EU Charter, 2012). Nevertheless, this framework also appeared because the economic aspect was taken into consideration. In fact, there was a growing question about the economic impact of discrimination in the labor market. The issue was and still is to understand in what way discrimination is affecting the implementation of policies on the labor market and how these policies are influencing the labor market in return. As a result, this concern was raised, in the first place, in the US, by some economists such as Gary S. Becker. Indeed, in 1957, he found out that there were lots of discrimination against minorities and showed that especially after the War there was a necessity to deal with these. Becker found out that there were no studies from economists regarding the discrimination on the labor market but only from psychologists and sociologists. However, for him, these “non-pecuniary motives” (Becker 1971, p. 10) are influencing the economy as a whole and as a consequence every person’s life, so it seems extremely important to deal with it. That is why he decided to combine economics and social sciences, to study human behavior within the labor market. For his work on the Economics of Racial Discrimination, he received Nobel Memorial Prize in Economics by the Royal Swedish Academy of Sciences in 1992, since he applied the most important economic principles to sociology: He took the notions of rational players in a market who are acting in their interests and interact with one another to explain that discrimination is leading to consequences for both people discriminated and people who are discriminating. Moreover, according to another economist, Glen G. Cain who stated that “economic discrimination is defined as differences in pay or wage rates for equally productive groups.” (Becker 1971, p. 2), it is crucial to understand in which way social and economic sciences and especially an economic analysis of the labor market discrimination can help to set up a legal framework against the discrimination? Actually, law and economics are related and have impacts on each other. The study of one cannot in fact be dissociated from the other and this is what G. Becker showed in his very first research: “judges and other officials need a method for evaluating laws’ effects on important social values. Economics provides such a method for efficiency.” (Cooter & Ulen, 2016, p. 4). However why efficiency is that much essential? As R. Cooter and T. Ulen explained: “efficiency is always relevant to policymaking, because public officials never advocate wasting money” (Cooter & Ulen, 2016, p. 4). Thus, law and economics are inseparable, especially when one introduces the variable of the labor market, which is in the core of the entire economy.

## **2. THEORIES OF DISCRIMINATION ON THE LABOR MARKET: CONSEQUENCES FOR INDIVIDUALS?**

As Mankiw pointed out “Discrimination occurs when the marketplace offers different opportunities to similar individuals who differ only by race, ethnic group, sex, age, or other personal characteristics. Discrimination reflects some people’s prejudice against certain groups in society” (Mankiw, 2015 p. 403). G. Becker and most of the others economists used microeconomics i.e. they relied directly on studying individuals, to explain how a discriminatory behavior on the labor market is affecting people’s choice and people’s life. However, quite recently, some researchers decided to rely on the macroeconomics’ repercussions of labor market i.e. they are dealing with economics on a large scale and with variables such as growth or unemployment. Indeed, that is exactly what M. Asali and R. Gurashvili achieved (Asali & Gurashvili 2019).

After analyzing the macroeconomics' point of view, they applied their approach to a focused study of Georgian people dealing mainly with gender and ethnic wage discrimination. First of all, they showed that the rising of labor market discrimination was fundamentally leading to a diminution of the economic growth and vice versa: in the long-run, discrimination reduces economic growth, and economic growth lowers discrimination, by using the Granger causality concept between discrimination and growth namely a negative and bidirectional Granger causality (Asali & Gurashvili 2019). They clearly demonstrated that economics can be supported by appropriate regulation by policymakers but it also shows that law cannot be applied in the best way if economics is not taken into consideration. Others economists supported this thesis, particularly J. Stiglitz, who considered that the well-being of the population and thus the non-discrimination of individuals in general contribute to the country's performance (Stiglitz, 2012). According to him, taking only the economic perspective into account is not relevant since the only way to achieve economic prosperity is to deal with both equality between people and economic aspects which are inseparable in the elaboration of policies. Moreover, P. García-Mínguez and F. Sánchez-Losada made a theoretical research and came to the same conclusion. They were analyzing two policies of a government that were made to eliminate statistical discrimination in wages, though the equalization of the after tax income of working individuals. They came to the conclusion that it has advantages for everyone to implement policies to fix discrimination on the labor market and especially this type of policy, since it leads to increase in the growth rate (García-Mínguez & Sánchez-Losada 2003, p. 260) and is also beneficial to individuals that used to be discriminated. However, even though the macroeconomic variables are relevant to explain in what ways economics is influencing discrimination on the labor market and vice-versa, most of the researches are relying on microeconomic analysis in order to take a closer look at each group, each country which are all fundamentally different in their customs and traditions, and this implies that discrimination is different in nature and appears on a different scale. As a result, microeconomics is the most essential for understanding and implementing economic policies: "macro analyses can only catch general patterns that cannot be used for policy implications for different countries. Research on the topic, therefore, should be performed using micro-level data only." (Asali & Gurashvili 2019, p. 6). As a result, most of the theories then used empirical situation. The main concern was to "explain how workers who are intrinsically equal in productivity receive unequal wages." (Cain 1984, p. 12). This was the basic assumption of G. Becker when he wrote his thesis on discrimination in the labor market. According to him, it was very important to deal with the topic of "economic productivity" because "it emphasizes phenomena that have long been neglected in literature on discrimination" (Becker 1971, p.14). That is the reason why, by relying on a neoclassical theory, namely in a demand-side theory, he is trying to address why there are discriminations on the labor market: "Discrimination in demand can be seen as a willingness-to-pay to avoid contact with the minority group or, equivalently for my purposes, willingness-to-pay for contact with the majority group." (Cain 1984). Indeed, for him, everything begins with the "tastes for discrimination" which can be understood as "prejudice". He does not explain why there is prejudice but highlights the point that individuals and especially customers are having preferences against people on the labor market in the same way individuals are having preferences on the goods and services market. As a result, he arrived to the conclusion that segregation seems to be the answer for him since black workers will tend to be more specialized in the production of goods with no customer contact in order to get a better salary than if they had to be in competition with a white worker although they are equally productive (Becker 1971). In that way, the segregation *by industry* of the black workers will help to reduce the wage rate differences. In fact, a "black worker is paid less" due to the discrimination and as a result, there is a difference in wages for the same productivity with a white worker and on the other hand for "the discriminating employer incurs greater expense to

obtain the same productivity” since he prefers to employ white employees who have the same productivity but with higher wages. To explain this, he is using the “discrimination market coefficient” with  $WB$  as the wage-earning by Black workers and  $WW$  as the wage earned by White workers. Indeed, normally it costs  $WB$  to hire a black employee but the employer is thinking that it costs  $WB(1+d)$  with  $d$  as a positive number which lead to the “discrimination market coefficient” (Becker 1971, p. 17). This relation shows that employers are overestimating the cost of Black workers. According to G. Cain who relies on G. Becker thesis, the theory is that on a competitive market, the discrimination tends to decrease (Cain 1984). Indeed, for him if there are more employers on the market, there will be more non-discriminating employers willing to hire black workers since they will find out that, at equilibrium, it is less costly to hire a black worker than a white one. That is why for G. Becker “greater competition would act as a strong force in reducing labor-market discrimination” (Murphy 2015). Moreover, he also mathematically proved that competition is important since by taking into account the discrimination on non-market areas, without adequate legal non discriminatory provisions, such were schools for example; black workers are more discriminated against.

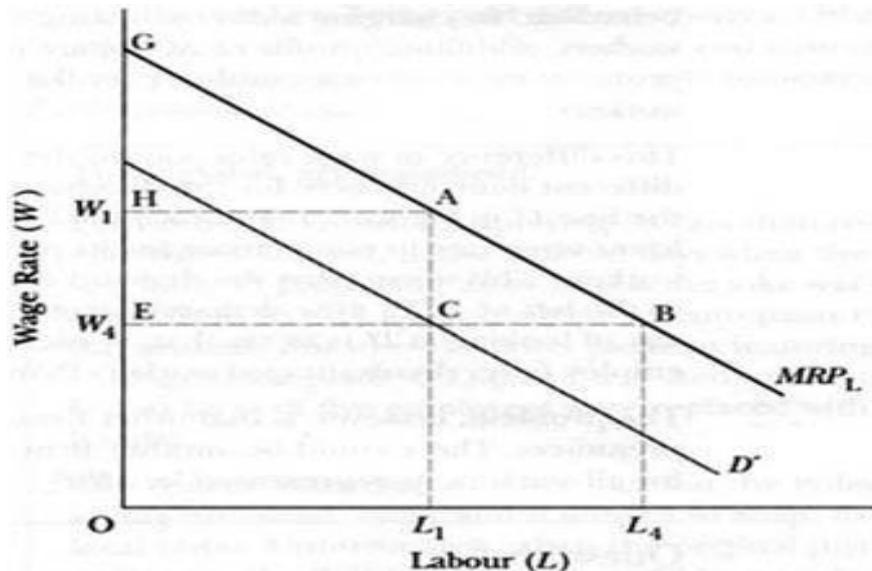


Figure 1: Employer discrimination in the demand for labor (Becker 1971)

As the Figure 1 shows, there is the production curve represented by the Marginal Revenue Product curve (the  $MRP_L$  on the Figure 1.) which is the same no matter if the employee is Black or White since it is the demand for labor. This figure in fact shows that an enterprise will always decide to employ labor force up to the point where the wage equals the marginal revenue product of labor if there is a competitive market. Indeed, the non-discriminating enterprises will pay a lower salary to minorities who are usually discriminated and will as a consequence get a better place on the market. Discriminating enterprises will then be forced not to discriminate in order to be as competitive as their rivals, since they understood that if they are doing so, they will lower their costs and make higher profits. The discriminating enterprises will be inefficient if they are continuing to discriminate. We can see that at a wage  $W_4$ , enterprises which are discriminating will employ  $L_1$  workers however; non-discriminating firms would employ  $L_4$  workers. As a consequence, the non-discriminating enterprise will produce more since it will have more labor force for the same amount of wages paid than the discriminating enterprise. The variable of a competitive market is very important since discrimination tends to be eliminated in this case. Moreover, as G. Becker showed in his analysis, the answer is totally different on a monopolistic market (Becker 1971).

However, one variable that needs to be taken into consideration is the measuring of discrimination which can only be obtained if the victims of discrimination report it. Thus, this makes measurement complicated and may also make empirical studies difficult. Moreover, economists can have difficulty to take it into account, while there is also a huge “inattention to the non-monetary pain felt by the victim of certain types of discrimination”<sup>30</sup> (Cain 1986, p. 710) and this “will limit the economist's contribution to social welfare and policy analyses” (Cain 1986, p. 710).

### **2.1. Discrimination based on gender within the labor market**

There are different types of discrimination regarding gender on the labor market. During the 20th century women have to balance between participating in labor market and taking care of majority of household chores within their families (Zlatkov,2022). Indeed, there is discrimination in hiring and in wage rates. The gender pay gap refers to the difference between the wages earned by women and by men In order to take into account differences in working hours and the impact of the income tax system, most estimates are based on differences in gross hourly wages The most common method is to calculate the gender pay gap as the ratio of women’s average gross hourly wage to men’s average gross hourly wage, or as the difference between men’s and women’s gross hourly wage as a percentage of men’s average gross hourly wage (European institute for gender equality 2006). European Commission furthermore points out that usually women have to “Balance work and private life. Family chores are done by women and not shared equally. More women choose to take parental leave than men. This fact, together with the lack of facilities for childcare and elderly care, means that women are often forced to exit the labor market: only 65.8% of women with young children in the EU are working, compared to 89.1% of men” (EC – Gender Equality). Different economists that made a study regarding the former Soviet Union, showed that when they were no proof that women were discriminated in hiring, statistics were highlighting the fact that these women will, almost always, be discriminated afterwards i.e. they will get a lower wage compared to male employees (Asali, Pignatti, Skhirtladze, 2018). As a consequence, the most relevant point to study is how the discrimination appears regarding the difference in wage rates within the labor market in between men and women, and that is exactly what most of the scholars made. Once again, some empirical studies were made, but one of them was very interesting since it encompassed both gender and ethnicity discrimination on the Georgian labor market. For instance, Georgian women were earning in average a real monthly wage of 307 GEL while men were earning approximately 468 GEL per month (Asali & Gurashvili 2019, Table 1). In the same study, they showed that “males of all ethnicities earn more than females” (Asali & Gurashvili 2019, p. 9) which show how important is the criterion of gender on the labor market. This study mainly concluded that “ethnic and gender wage discrimination Granger-cause economic growth—an increase in either type of discrimination leads to a reduction in economic growth. Likewise, higher growth rates, for the most part, lead to lower labor market discrimination.” (Asali & Gurashvili 2019, p. 2). This influence on the GDP growth will, as a consequence, impact the labor market and, as a result, the individual workers themselves. However, other researchers such as S. Seguino were supporting the opposite thesis for whom the “empirical analysis shows that GDP growth is positively related to gender wage inequality in contrast to recent work which suggests that income inequality slows growth” (Seguino 2000). Her analysis was nevertheless hugely criticized by other economists such as Thomas Schober, and Rudolf Winter-Ebmer (2011), who went through the study and data used by S. Seguino and proved the total opposite of her study, since according to them, the data she used were not relevant for the research she conducted.

## **2.2. Discrimination based on color or ethnicity within the labor market: A special focus on migrants' integration**

Discrimination based on color or ethnicity is an important concern since it raises also the question of migrants' integration on the labor market. Indeed, migrants and their integration inside the labor market will be one of the variables that will influence policymakers and, in the end, the economy. As a consequence, what is interesting is to study in what ways the migrants are getting integrated on the labor market or, more precisely, how they are getting discriminated against, because of their status and which measures can be taken to resolve this problem. The research is very relevant because from one country to another, from one community to another, migrants will not be integrated in the same way. That is also why research based on microeconomic tools makes more sense. According to G. Becker, the higher unemployment is, the more there will be ethnic wage discrimination (Becker 1971). More recently, other scholars carried some studies in order to determine if there is a relation between recession on the labor market and ethnic discrimination that can appear on it in regard to this new concern: the arrival of immigrants (Kingston, McGinnity, O'Connell, 2013). They conducted a survey regarding the Irish labor market comparing two years: 2004 which was a year of economic expansion and 2010 which was for Ireland, such as the rest of Europe, a year marked by recession. G. Kingston, F. McGinnity and P. J. O'Connell (2013) found out that immigrants were discriminated at all stages on the labor market i.e. on the hiring and when they were hired, on the workplace and this, no matter if the economy was in recession or not. These shows that even in a bad economic situation, firms are still deciding to discriminate against minorities. This follows, as a result, the concept which was developed by Becker regarding the "taste in discrimination" (Becker 1971). Cain, by relying once again on Becker's concepts, claims that employers are hiring "segregated" workers in order to pay less and make bigger profits: "Clearly, employers of white workers would employ segregated work forces to pay the lower wage." (Cain 1986, p. 712). Another analysis was conducted in 2018 by E. Derenoncourt and C. Montialoux regarding the implementation of the minimum wage policy and how it had influenced the racial or ethnic discrimination within the labor market in the USA. The question they raised was: does the implementation of a new policy, namely minimum wage policy, in new sectors of industry will help decreasing the discrimination? (Derenoncourt & Montialoux 2018). According to their findings and thanks to a comparison between Black and White workers, they concluded that this policy in fact "reduce racial economic disparities". Moreover, according to them, this policy even participated in a reduction of "more than 20% in the racial earning gap during the late 1960s and early 1970s". However, as stated before, this conclusion cannot be global in the sense that this policy was implemented in the USA and therefore is unique to the USA since the sectors that were not having minimum salary before were the ones where Black workers "were over-represented: agriculture, hotels, restaurants, schools, hospitals, nursing homes, entertainment, and other services. These sectors employed about 20% of the total U.S. workforce and nearly a third of all black workers." (Derenoncourt & Montialoux 2018). Thus, the situation in the United States has to be taken into account in the results obtained for this study. Indeed, the research conducted by International Labor Organization (ILO 2022) concerning the multiplicity of minimum salary concluded that some countries are even introducing different minimum wages for young people and apprentices but also for migrants and disabled people. The problem is also that in certain situation, the discrimination also exists between the migrants i.e. it is an intra-ethnic discrimination. Indeed, that is what G. Kingston, F. McGinnity and P. J. O'Connell (2013) concluded from their researches about the Irish labor market. They realized that not all the immigrants were treated in the same way and found out that Africans and EU nationals of minorities were the ones facing more discrimination: "Black African and minority ethnicity EU groups report very high rates of discrimination when looking for work (Kingston, McGinnity, O'Connell, 2013, p.17).

Nevertheless, some economists insisted on the fact that employers are starting to be aware that they can benefit more from including immigrants into their firms whether than to discriminate them; discrimination “tends to wither with time, as employers get to know the workers and their abilities better” (Asali & Gurashvili 2019, p. 6).

### 3. CONSLUSION

To put everything in a nutshell, the labor market discrimination is having huge impact not only on individuals but also on the economy as a whole in each country. However, the studies should always target a particular country in a particular time or situation since the discrimination is not the same everywhere and every period. Indeed, a lot of variables need to be taken into account while studying the labor market discrimination and that is why microeconomic tools are the best to rely on. It also explains why having unified global or even regional framework regarding this topic can be quite difficult. Nevertheless, most of the studies, old or recent ones, are showing that discrimination still exists, mainly towards women and immigrants on the labor market, even though these individuals are potential added value for the market. As a consequence, it seems that every country needs to implement policies to reduce discrimination as much as possible, until it will be eliminated. It looks like if policymakers want their policies to be effective, they need to take into consideration all the variables that are proper to their own societies. That is the reason why studies should first find out which groups are discriminated against, at which stage on the labor market and why, in order to implement strategically policies that will eliminate discrimination. Eradicating discrimination on the labor market is one of the most important tasks nowadays since the workplace represents “one-third of our life” and, as explained throughout this paper, the social vision cannot be put aside while elaborating policies that should participate in the improvement of the economic efficiency and vice-versa. Discrimination based on gender is most pronounced in labor law. It is visible, but poorly recognized through the employment process itself, but also later, through the conditions of advancement and issues of salaries for women and men. Women, who joined paid work relatively late, faced various stereotypes and prejudices about their knowledge and abilities, all as a result of traditional thinking” (Zlatkov, 2022, p. 1). Although there are some economists, notably Grigory Mankiw, who points out that “business owners who care only about making money are at an advantage when competing against those who also care about discriminating. As a result, firms that do not discriminate tend to replace those that do. In this way, competitive markets have a natural remedy for employer discrimination” (Mankiw, 2015, p. 406). Yet, even they will acknowledge that state has to play intelligent regulating role in economy in order for markets to become more competitive. Passing and enforcing appropriate legislation, not to mention having good educational system that will root out any notion of negative and unreasonable discrimination, are good ways of solving this problem in the long run.

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# THE DIVIDEND POLICY IN THE REPUBLIC OF NORTH MACEDONIA FROM LEGAL, COMPANY'S AND INVESTOR'S PERSPECTIVE

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## **ABSTRACT**

*This paper deals with the dividend policy in the Republic of North Macedonia. After short presentation of the relevant dividend theories, it continues with the perception and the importance of the dividend policy to the investment public, based on a questionnaire answered by random sample of respondents. Next, it elaborates the current legal framework regarding the dividend policy and the gap between the legal framework and its implementation by the companies. The main findings and recommendations stemming from the analysis are the following: 1. the dividend policy plays an important role in the investor's decisions for selecting the individual shares in their portfolio. 2. The legal framework for the dividend policy is not as elaborated as it could and should be. 3. Most of the companies do not have officially adopted and publicly announced dividend policy. 4. There is room for improving both the legal framework regarding the dividend policy and enhancing the enforcement powers of the Securities and Exchange Commission (SEC) in this domain.*

**Keywords:** *Dividends, Dividend policy, Payout ratio, Stocks, MBI10 stock index*

## **1. INTRODUCTION**

An investment operation is one which, upon thorough analysis, promises safety of principal and a satisfactory return (Graham, Dodd, 2009). An investment operation which does not meet these requirements is called speculation. The intelligent and rational investor in the process of evaluating securities considers multitude of quantitative and qualitative factors, such as: the quality of the management, the quality of the products or services offered by the company, the future prospects of the industry, the past record and the estimation of future company's earnings, the return on assets (ROA) and return on equity (ROE) of the company compared to the industrial average, the historical dividend payouts, the dividend policy of the firms. One of the main constituents of value investing is the evaluation of the past dividend record of the company, as well as the estimation of future earnings and payout ratios. The dividend decisions are determined by the firm's dividend policy, and they affect the share of profit which is distributed to the stockholders. The dividend policy refers to the size and pattern of cash distributions to the shareholders over a given period. On one hand, the payout ratio affects the company's ability to retain earnings to pursue profitable investment and growth opportunities. On the other hand, many investors regard dividend policy important because the dividend decisions directly affect the return on their investments. This paper is organized in the following manner. After the Introductory section, in the second section some of the most important dividend theories are succinctly examined.

In section three the importance of the dividend policy to the individual investors is discussed. In the fourth section the legal framework regarding the dividend policy and its implementation by the Macedonian companies are analyzed. Finally, in section 5 the main findings are presented, as well as some recommendations.

## **2. DIVIDEND THEORIES**

The dividends are always a “hot” subject in the investment world (e.g. Rees, 1997; Fama and French, 1998; Giner and Rees, 1999; Akbar and Stark, 2003; and Hand and Landsman, 2005), and in academic this topic starts with the research from Miller and Modigliani’s (1961). Countless articles are written regarding the dividends and dividend policies. As a result there is a plethora of theories and empirical research regarding the subject. In this section we will concisely explain: the dividend irrelevance theory, the theory of dividend clientele, the agency cost theory, the dividend signaling theory and the firm life cycle theory of dividends.

### **2.1. The Dividend Irrelevance Theory**

According to Modigliani and Miller (1961) the proponents of this theory, dividends don’t play a significant role in the process of evaluating stocks. This theory propounds that to evaluate a particular stock, the investor needs to consider the earnings of the firm, which are dependent on the investment policy and the growth prospects. Thus, it is apparent that for the evaluation of stocks, the investor needs to fully comprehend the firm’s investment policy. The authors contend that if the investor needs more money than the dividend received, he could always sell part of his investment. Inversely, if the investor does not have immediate liquidity requirements, he can always reinvest the received dividends in repurchasing new stocks.

The irrelevance theory is based on the following assumptions (some of which are very strict): existence of perfect capital markets and rational investors, the absence of uncertainty and taxes (alternatively there is an equal tax rate for both the dividends and capital gains), fixed investment policy and investor indifference between dividends and capital gains.

### **2.2. The Theory of Dividend Clientele**

The shareholders who have similar views on the firm’s dividend policy are called dividend clientele, (Miller 1977). This group favors a certain dividend payout ratio based on their related income, tax, age, or risk perception. The dividend clientele makes investment decisions in companies whose dividend policy appear most suitable with their goals and is aligned with their investment objectives. This group of shareholders can produce the so-called dividend clientele effect when the dividend policy of the firm is not aligned with their expectations. In other words, if the company’s dividend policy does not meet the individuals’ objectives, they could start selling the stock to buy stocks with higher dividend yield, thus the dividend clientele could affect the price of the stock.

### **2.3. Agency Cost Theory**

The agency costs represent an internal company expense and stems from the relationship between the agent (managers) and principal (shareholders). Managers should run the company in a way it maximizes the shareholders wealth, thus acting in their best interest. Instead, managers frequently undertake unreasonably risky ventures or invest in projects with negative net present value for personal purposes, thus acting contrary to the shareholder’s best interest. Pinkowitz et al. (2003) concluded that in countries with low legal performance on corruption issues the dividends are worth a lot more than they are in countries with little corruption problems. Furthermore, in cases of high corruption cash from dividend means less money to be stolen by company management. La Porta et al. (2002) argues that agency problems and trim firm value is recognizable in country where the investors protection is low.

According to the agency cost theory, the dividend policy could alleviate this problem in a way that the higher dividend payout ratios leave smaller amount of cash available for investing. In this context, the dividend policy acts as a disciplinary tool in the hands of the shareholders towards the management of the company.

#### **2.4. Dividend Signaling Theory**

The dividend signaling theory suggests that the dividend announcements have positive or negative influence on the stock's price and that they disclose valuable information about the prospects of the company. According to this theory, the stock price moves in the same direction as the dividend, because dividend changes convey information about the firm's growth opportunities (Kent, 2009). In other words, an increase in the dividend payout signals favorable prospects for a given company. Contrary, a decrease in the dividend payout could announce future problems for the firm. Testing this theory Dielman and Oppenheimer (1984) find that the more stable the firm's dividend policy, the greater the decline in stock value when a dividend omission occurs. In a related study, Kalay and Loewenstein (1986), find that the market expects firms to make dividend announcements according to a timetable consistent with previous announcements.

#### **2.5. The Firm Life Cycle Theory of Dividends**

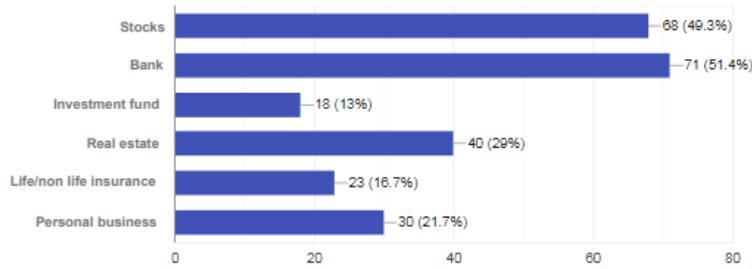
The firm life cycle theory of dividends is based on the notion that as a firm matures, its ability to generate cash overtakes its ability to find profitable investment opportunities (Kent, 2009). In the mature stages of the firm's life cycle, it is wiser to distribute the firm's free cash flow to its shareholders in the form of dividends. According to this theory, a young firm faces abundant investing opportunities, while at the same time dealing with cash shortages needed to meet these investing possibilities. Thus, a young firm will be more conservative in its dividend decisions i.e., it will preserve cash as retained earnings to be able to finance the investment opportunities. On the other hand, a firm in its mature stage has fewer investment opportunities available, stable profitability and reduced risk. In this phase enough cash is generated from the firms operating activities, while there is paucity of sound investment opportunities. Eventually, the best way to dispose the cash is in the form of dividend distribution to the shareholders.

### **3. THE IMPORTANCE OF DIVIDEND POLICY FOR INDIVIDUAL INVESTORS**

#### **3.1. Review of the Main Answers from the Survey**

This section is presenting the results of a survey regarding the attitudes of the sample from 140 individual investors in the Republic of North Macedonia, in general, and about the importance of dividend policy in their investment decision-making. The respondents of the questionnaire are of heterogeneous age. Concerning the educational status, the bachelor's degree (52,9%) prevails. The investors put significant emphasis on the dividends in the process of evaluating and selecting the stocks for their portfolios. Almost 95% of the respondents answered that the regular payment of dividends matters to the shareholders, underlining the significance of the dividends to the investors. In addition, 62,2% of the respondents have answered that the regular dividend payments have significant impact in the process of stock selection in their portfolios. Regarding the risk appetite, the sample is dominant risk neutral, with more than half of the respondents. Furthermore, 36% are inclined to taking risk, and around 12% risk averse. The analysis shows that more than 70%, the respondents invest in stock market with expectation on capital gains and dividends in combination. Very little are in long positions for capital gains and around 17% are investing for dividends only. However, the relevance of regular dividend payment is high, for more than 70% of answers.

3. Where do You invest your savings?



5. When investing in stocks the main motive is to realize yield from:

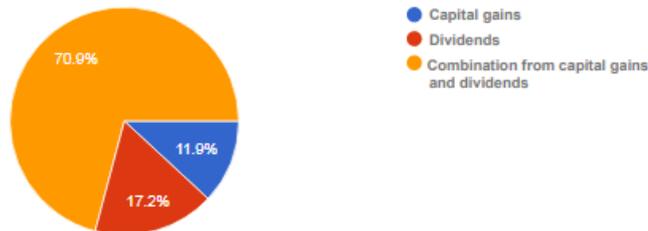
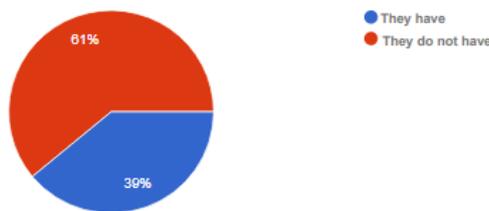


Figure 1: Answers of the question number 3 and question number 5  
 (Source: Authors calculations)

The results of the survey show that the individual investors are mainly familiar with the dividend policy of the Macedonian companies. Namely, 61% answered that the companies listed on the Macedonian Stock Exchange ad. Skopje (MSE) do not have officially adopted and published dividend policy. Additionally more than 38% consider that less than 10% of the listed companies have officially adopted and published dividend policy. Furthermore, no more than 34% of the responds sees less than 1/3 of the listed companies with official dividend policy.

7. Do the companies listed on the Macedonian Stock Exchange have officially adopted and published dividend policy?



8. What is the percentage of the companies listed on the Macedonian Stock Exchange who have officially adopted and published dividend policy?

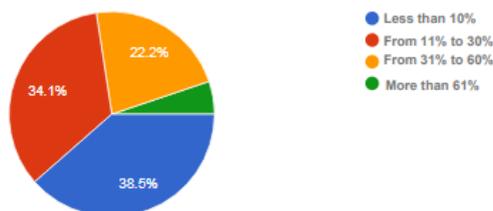


Figure 2: Answers of the question number 7 and question number 8  
 (Source: Authors calculations)

The investment public is familiar with the legislature concerning the dividend policy. Among other things, most of the respondents correctly answered that the Shareholders Assembly is responsible for the adoption of the dividend policy, which is implicitly written in the relevant law. Additionally, more than 44% answered that listed companies have legal obligation to adopt and publish a dividend policy, expecting for the shareholders assembly to adopt it. Moreover, less than 25% answered that the Exchange commission have the authority in the enforcement of the dividend policy. The respondents gave interesting answers to the questions: "Does the SEC have the authority in the enforcement of the dividend policy?" and "Does the SEC protect the shareholders rights regarding the dividend policy? In both cases less than a half gave positive answers to both questions".

### **3.2. Conclusions Drawn from the Survey**

The questionnaire enables unequivocal conclusion about the importance of the dividends to the individual investors. It shows that a major part of the investors regards the dividends as an important factor when deciding how and where to invest their savings. The poll shows that, after more than three decades since the beginning of the transition to the market economy, 29 years since the establishment of the SEC and 25 years since the first transaction has been realized on the MSE, we have relatively well informed and educated investment public. The survey gives insight about the investor perception of the role of the SEC in the domain of the dividend policy. In this context, the respondents estimate that the SEC should have increased responsibility in the enforcement of the dividend policy and the compliance with the corporate legislature. They, also emphasize the importance of the SEC in the protection of their guaranteed claim on the profit of the companies in which they possess shares. Finally, since most of the respondents (62,5%) found that the increased dividends signal improved prospects for the company, this is in accordance with the dividend signaling theory. In addition, 55,1% of the respondents answered that the companies which pay dividends are considered less risky to invest in, while 48,2% of the respondents would sell the stocks which stop paying dividends, after a longer period of continuous dividend payment. This is in line with the dividend clientele theory.

## **4. THE LEGAL FRAMEWORK REGARDING THE DIVIDEND POLICY AND ITS IMPLEMENTATION BY THE MACEDONIAN COMPANIES**

### **4.1. The Relevant Legal Framework for Dividend Policy**

The dividend policy and the dividends as a constituting part of the dividend policy are encompassed in the Law on Trade Companies and the Law on Securities. The basis for the dividend policy of the Macedonian companies is laid down in the Law on Trade Companies. There is only one article where the term dividend policy is explicitly stated. It is the Article 384 par. 7 from the Law on Trade Companies. A very similar provision is included in the article 154 of the Law on Securities. According to these articles the companies should have officially adopted dividend policy. The companies should also make the dividend policy publicly available, through publication in the annual reports, or otherwise. The other relevant articles from the Law on Trade Companies which are related to the dividends are: 278, 483, and 487 to 490. In the article 278 the right to dividend is established. According to the Law the right to dividend is fundamental, imperative, and unalienable right to the holders of common shares. It is of equal importance and has strong legal protection as the voting right and the right to receive distributions of portions of the remainder of the liquidation, in case of bankruptcy. The article 483 deals with the implementation of the dividend policy and prescribes the main components of the decision on distribution of the profits of the company by the Shareholder Assembly. The payment of dividend according to the Law is of high priority in the distribution of profits.

It comes only after the covering of losses, if any, and the fulfillment of the legally prescribed reserves. Although, in the law it is not explicitly stated which governance body oversees adopting the dividend policy, implicitly it can be deduced that it is the General Assembly, since it is responsible for deciding about the share of profits distributed as dividends. The articles from 487 to 490 are more or less of technical nature and rather self explanatory. They refer to the maximum amount that can be paid as dividend, the form in which the dividend might be paid, the possibility of paying an advanced dividend and the technical details concerning the ex-dividend date and date of payment of the dividend.

#### **4.2. Implementation of the Dividend Policy Legislation by Macedonian Companies**

To get deeper and more detailed picture about the dividend policy practice of the Macedonian companies, a specially designed questionnaire has been sent to all the companies which are part of the MBI10 Index and to twenty-two more other shareholding companies. The response was very feeble: none of the constituents of MBI10 Index gave response and only three out of twenty-two other companies. The meager response is very informative by itself. Despite the clear and precise obligation for the companies, stemming from the Law, to formulate and adopt a dividend policy and to make it public, to our knowledge none has respected this legal obligation. The only information disclosed in the annual reports with reference to the dividend policy is the amount of dividends paid, if any. In addition, only four of the company's constituents of the MBI10 Index have disclosed some information about the past dividend payments on their official websites.<sup>1</sup> It is also worthwhile mentioning that despite the provisions in the article 278 of the Law on Trade Companies, there are firms, which, although they exist for more than three decades as shareholding companies, have never declared and paid dividends to their shareholders. This is particularly case with the closely held companies, with no free float. Finally, only few companies fully respect the article 483 and enumerate all the components provided by the law.

#### **4.3. Principles and Main Components of the Dividend Policy**

The dividend policy as a document that conveys information to the public should be carefully designed to reflect the company's mid-term or long-term goals and objectives regarding the growth potential and the profit distribution to the shareholders. In that context, the dividend policy should address the following topics:

- 1) Introduction - part where the dividend policy of the company is briefly explained.
- 2) Validity period and amendment procedure - part where the validity of the dividend policy document is stated. This section also specifies the governance body responsible for the approval, updating and monitoring of the dividend policy.
- 3) Terms and definitions - part where terms associated with the dividend policy are explained. Such terms are dividends, dividend payments, decision on dividend payments, persons entitled to dividends, annual general shareholders meeting, etc.
- 4) Key provisions - part where the right to dividend of the shareholders is plainly stated and that the announced dividends are a company's obligation towards its respective shareholders. This section also encompasses the principles of the company's dividend policy, such as: the compliance of the dividend policy with the Law and the mid-term and long-term goals of the shareholders, the alignment of the dynamics of the dividend payments with the profits of the company. The principles of the dividend policy also specify the amount of dividends paid in relation to the profits of the company and the type of

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<sup>1</sup> The respected reader can visit the websites of Alkaloid AD Skopje ([www.alkaloid.com.mk/data-on-shares-en.nspj](http://www.alkaloid.com.mk/data-on-shares-en.nspj)), Telekom AD Skopje ([www.telekom.mk/dividenden-kalendar.nspj](http://www.telekom.mk/dividenden-kalendar.nspj)), Komercijalna Banka AD Skopje ([www.kb.com.mk/Default.aspx?sel=1350&lang=1&uc=1](http://www.kb.com.mk/Default.aspx?sel=1350&lang=1&uc=1)) and NLB Banka AD Skopje. ([https://nlb.mk/NLB\\_Banka/About\\_the\\_Shareholders.aspx#tab-81](https://nlb.mk/NLB_Banka/About_the_Shareholders.aspx#tab-81)). Note, the sites were last visited on 14.02.2021

dividend payments (increasing, constant, irregular or residual). Finally, the key provisions section includes the explanation of the dividend decision making procedure and the process of distribution and payment of dividends.

- 5) Informing the shareholders on the dividend policy - part where the publication of the dividend announcements is explained. It also includes information about the amendments to the dividend policy of the company, as well as the level, form, and procedure of the dividend payment.

## 5. CONCLUSION

The main objective of this paper was to analyze the legal framework of the dividend policy in the Republic of North Macedonia, and to find out what is the importance of dividend policy from investors and company's perspective. The main conclusions and recommendation are the following. Firstly, the dividend policy plays an important role in the investor's decisions for selecting the individual shares in their portfolio. Secondly, the legal framework for the dividend policy is not as elaborated as it could and should be. Thirdly, most of the companies do not have officially adopted and publicly announced dividend policy. Finally, there is plenty of room for improving both the legal framework for dividend policy and enhancing the enforcement powers of the SEC in this important investment area, which should be done soon through amendments to the existing legislature.

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## CREATIVE THINKING TECHNIQUES IN SECURITY OPERATION CENTERS

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### ABSTRACT

*This paper examines the implementation of creative thinking techniques in security operation centers (SOC) aimed at increasing effectiveness of an organization's defense. It is a well-known fact that some of the most destructive cyberattacks are carried out very carefully, with a large amount of time and knowledge spent on preparation. In such cases, the impact on organizations is catastrophic. If on the other side of defense, we have state-sponsored attackers, with a constant source of funding helping to increase their capabilities, it is only a matter of time when they will find an appropriate way to achieve their vicious goals. Therefore, it is utterly important to remain aware that attackers are highly innovative in carrying out their intentions and this is their main advantage. Creative thinking techniques that we explore in this paper utilize the expertise of various individuals in a security operations center in a structured and directed manner. It is important that experts whose task is to monitor and defend the system conduct exercises together, each giving their individual contribution. This approach allows for a free exchange of ideas, experience, and knowledge. Thus, the effectiveness of the defense system is not limited only to the knowledge and "gut feeling" of the individual who observes the monitoring tools at a certain point in time, but it relies on shared experience of all members of the team. Through team-work and collective wisdom it is possible to devise different breach scenarios in the organization, and even those "we-haven't-thought-of-that" moments. Such scenarios often go unnoticed and neglected in the integration of an organization's monitoring and defense solutions. Attackers are aware of that, think exactly like that and can resort to "abstract" but highly effective attacking techniques. And they truly are creative, numerous cyber investigations prove this. Therefore, defense must be even more creative to be one step ahead of the attackers and to effectively carry out Threat Hunting and other SOC operations.*

**Keywords:** *Adversary Emulation, Creative Thinking Techniques, Cyber Threat Hunting, Morphological Analysis*

## 1. INTRODUCTION

### 1.1. Creative attacker

Attackers in cyber space have different motives: financial, ideological, political, etc. Whatever the motives are, the attacker is often very creative in order to achieve his goals. He has to find a way, for example, to "persuade" a potential victim to activate a malicious attachment in a phishing e-mail. In addition, the attacker can combine the attack and thus include several different technologies and communication channels: phishing e-mail and a fake phone call to make it more convincing; phishing e-mail and a SMS message, with password for attached document, etc.

E-mail is not the only intrusion vector into the organization, what about other technologies used by the target organization: publicly available services, printers, external suppliers and more? If, on the other hand, we have an adversary who wants to breach an organization, and at the same time has a constant funding, then he will be persistent in his efforts. He is financially supported and continuously develops his capabilities that will enable him to find system vulnerabilities (opportunities). This is specific to state-sponsored cyberattacks. Persistence and careful planning of the attack will generate “exotic” ideas, or less likely attacking scenarios, which are not included in the monitoring or defense system. If neglected, they can provide a gateway for the attacker into the organization. There are many examples of attackers’ creativity when it comes to technology. Captain Zap<sup>1</sup> is one of the first hackers to understand how technology can be used in a bad way. In 1981, he broke into the telephone system of AT&T in the USA and switched the clock value with 12 hours (AM for PM and vice versa). So, the price of the day and night telephone rates was switched. Those who were waiting for a cheaper nighttime phone rate, unknowingly, were talking at higher daytime rates. Although a simple hack, in the context of its time it was a very clever attack. Wired<sup>2</sup> magazine ranked it as one of the greatest hacks of all time. Another interesting hack was performed by Simon Weckert<sup>3</sup> who had collected 99 mobile devices, put them all together in one cart and walked through the streets of Berlin. The Google Maps system had read a high concentration of mobile devices in a small area and has declared those streets congested. As Google maps is constantly updated, all those who used that service for car navigation bypassed that street. There are many other examples of hacker creativity, we mentioned only a few.

## 1.2. Creative defender

Technologies for security analysis and detection have reached a high level of efficiency, but they still lack the human way of thinking. We can say that they are not 100% reliable, i.e. they will not detect every single security breach or attempt. That is why an analyst, and his observational and analytical capabilities are crucial for defense. In the document "*The Sliding Scale of Cyber Security*"<sup>4</sup>, the author Robert M. Lee explains that relying only on technology is a passive defense. The active defense is technology with the involvement of an analyst who interprets, understands, and responds to detections. That’s why defender’s creativity is crucial for computer network defense. A creative defender will include scenarios that no one would have thought of and will monitor them. The attacker only needs one way to break into the system, while the defender has to find all possible ways to defend the system. The defender’s job is often much more demanding than the attacker’s. Cyber threat hunting fills the gap left behind by passive defense, i.e. automated protection systems. It is an integral discipline of the Security Operations Center. Cyber threat hunting are actions carried out by human (analyst). If these actions are carried out by one “hunter”, he is limited to his knowledge and experience only. That is why it is important to involve a team of people with different thinking, knowledge, and experience in the threat hunting process.

## 2. CYBER THREAT HUNTING

Cyber Threat Hunting is a discipline in cyber security that is most often an integral part of security operations center, and whose goal is to find threats that have not been detected by any sophisticated defense technology in the computer network. Once the attacker with the high capabilities gains access to the network, he can operate undetected in the network for months in a way to learn how the system works, collect data and look for the most vulnerable points in the system. Threat hunters assume in advance that the attacker is already in the system - this is called Hypothesis-driven Investigation. The hypothesis will either be confirmed with evidence or disproved without any evidence through an extended investigation usually using SIEM technology.

The creation of hypotheses often relies on already known techniques and tactics used by different groups of attackers. A useful catalog of tactics, techniques, and procedures (TTP) can be found in the MITRE ATT&CK<sup>5</sup> matrix on the official website of the MITRE Corporation. When an attacker uses a new, previously unseen attacking technique, detection engineers will improve the passive protection system by defining new detection rules that generate alerts, while threat hunters who perform active protection in the security operations center will look for exploitation traces of the new technique and all its variations in the historical logs. Although it is a proactive approach, again, the defender is still one step behind the attacker. Attacker is already using this technique in the wild. That is why it is important that a threat hunter, in addition to new attacking techniques, in his daily operations includes those techniques that are rare but can have a significant impact on the organization. In other words, "*we-haven't-thought-of-that*" scenarios should also be considered. That is why it is important for the defender to be creative. There are various creative thinking methods that can be used to modeling numerous attack scenarios: Starbursting, Brainstorming, Lotus Blossom, etc. By creating an attack scenario, a threat hunter actually creates a new idea, i.e. a hypothesis that has yet to be tested in security operation center by performing log analysis in SIEM. Threat hunting and the hypotheses created by the hunter should be relevant and current for the protected organization. "Relevant" means that they must cover possible and logical attacking scenarios. For example, if an organization produces sophisticated military equipment, it should make sure to protect intellectual property such as blueprints and documents that describe parts of the equipment and the production plan, stored on file servers and in databases. Hypotheses should be created with those thoughts and the hunter should think about which groups of attackers target such organizations, how the documents are saved and on which internal services. These services should be analyzed with the assumption that they are already compromised. Likewise, "current" (techniques) means that the hunter needs to test the techniques that attackers actively use in the wild. Thus, the hunter will test and look for the exploitation of techniques that are applicable on the operating systems installed in the organization. If the organization does not have any services in the Cloud, it does not make sense to create hypotheses that include analytical actions in the Cloud. The method we have examined and elaborated in more detail in this paper is Morphological Analysis. This creative thinking method, with the inclusive approach of several different experts, generates numerous possible scenarios for breaking into the organization's computer system.

## **2.1. Morphological Analysis**

It was developed by Fritz Zwitcky<sup>6</sup>, an astrophysicist who devised a method of investigating possible scenarios in a multidimensional space. Zwitcky applied morphological analysis to astronomy and rocket propulsion systems, but since it is a method that is not limited only to the areas in which he worked, morphological analysis is applied by many in completely different areas. We have applied this method in cyber security to generate possible scenarios for breaching a protected organization, but with an emphasis on those that we rarely think about. Morphological analysis breaks down a problem that can have many solutions to understand all its parameters (or elements) more easily. Parameters can have multiple options, so combining one option from each individual parameter can produce many possible solutions. Certain solutions may seem unlikely, but possible, while other solutions are simply not consistent in some combination options. Those options that cannot be connected in a meaningful and logical solution should be eliminated. Likewise, combining options can produce "exotic" or rare solutions that few would have thought of through "ordinary" thinking, without a structured approach such as morphological analysis. When we use morphological analysis in cyber security, this approach encourages the creativity of a group of experts who work as defenders in the security operations center, whether they are in the role of threat hunters, threat researchers

or something similar. It is possible to create numerous scenarios for breaking into a protected computer network, and of course detecting surprises that an attacker could prepare using creative thinking. This approach enables defenders to minimize the possibility of the scenario unfolding in a direction they did not foresee.

### *2.1.1. Procedure<sup>7</sup>*

First, gather a team of people in the security operations center who have different experiences, different levels of knowledge, different ages, mindsets, and different personalities. Diversity is important, each human being is different and sees the same problem from his own perspective in a different way. Experts have a certain level of knowledge, and each individual will bring some of their own thinking to the analytical process. According to the wisdom of the crowd concept, a group of experts put together will be smarter than the smartest individual in that group. Therefore, it is important that these workshops are conducted in larger groups.

The analytical phase consists of the following steps:

- 1) Defining the problem. Our problem (as defenders) is the impact of possible scenarios of a cyberattack on the organization we protect, with special emphasis on rare and unusual ones.
- 2) Defining the parameters that “decompose“ the problem (potential attack in this case) into several factors. For the sake of simplicity, we decided to describe possible attacks with four parameters: Device, Interaction, Attacking tool, Attacker's goal. We can set more parameters, but by including each new parameter, we significantly increase the number of their possible combinations. With each defined parameter, we want to answer the following questions:
  - Device – What is the attacker's entry vector?
  - Interaction – How will the initial contact be achieved?
  - Attacking tool – Which tool will be used to implement the attack?
  - Attacker's goal – What does the attacker want to achieve?

Additionally, parameters can be defined by steps according to the Lockheed Martin, the Cyber Kill Chain<sup>®8</sup>, or even more complex by tactics in the MITRE ATT&CK Matrix. Whichever of the two we use, we will generate an extremely large number of possible scenarios.

- 3) Define possible options (generate ideas) for each parameter in such a way as to design all possible devices that make up the computer network, ways of interacting with them, tools that the attacker could use, as well as the attacker's goal on that device. In our research, we defined four options for each defined parameter. For example, we defined four devices for the Device parameter: printer, IP telephone, IP video camera, IP TV screen. We have deliberately defined devices that are most often out of focus of monitoring in the security operations center. There are also many other IP capable devices such as computer, server, router, but they are not interesting to us now.

The synthesis phase: combining options from each individual parameter.

- 4) We define possible attack scenarios by connecting the options into a consistent combination, and those that are not mutually consistent, logical or possible, will be eliminated. Our matrix is shown in the following figure 1.

A consistent and possible attack scenario is marked blue.

- The attacker wants to use the printer as an entry vector;
- can interact with printer by connecting directly to it via WLAN (if the printer has a WLAN AP);

- he will use a drone with a WLAN card and password cracking software;
- he will upgrade firmware that has been modified with malicious code providing a backdoor.

*Table 1: Attacking scenarios*

<b>Attacking Scenarios</b>			
<b>Device</b>	<b>Interaction</b>	<b>Attacking tool</b>	<b>Attacker's goal</b>
Printer	WLAN connection	Laptop/Smartphone with WLAN card	Log theft
IP Phone	*USB stick/SD card	Drone with WLAN card	Firmware upgrade with malicious code (for persistence and lateral movement)
IP Video camera	**Disk replacement	Laptop with LAN card	Theft of documents
IP TV Screen	*LAN connection	Shark Jack <sup>9</sup>	Intercepting or stealing audio/video records

*\*Requires physical access to the device or network.*

*\*\*Devices that have a hard disk and are maintained by an external partner company may end up at the service center. Replacing a disk with embedded malicious code is also a way of interaction that an attacker needs to achieve before reaching his goal.*

An example of an inconsistent combination of options is marked orange.

- The attacker wants to use the IP phone as an entry vector;
- interaction with it cannot be achieved via USB or SD card because the IP phone does not have these ports;
- a laptop or smartphone with WLAN card will be used as a tool – the IP phone does not have WLAN, so that option is also incompatible;
- he wants to take the documents from IP phone – but usually phones are not used to store documents at all.

We conclude that the blue scenario is viable, and we will turn it into a threat hunting hypothesis, while the orange scenario is not viable, and we disregard it.

We have processed one combination out of the box shown in Table 1 that will generate the following threat hunting hypothesis in the security operations center:

- Threat hunting hypothesis – “Flying printer”  
 The attacker used a drone with a WLAN card and gained access to the printer. After that, he uploaded modified firmware that copies all documents that come to the printer to the attacker's server on the Internet. In addition, the firmware has a built-in backdoor that allows an attacker to remotely connect to the printer and achieve lateral movement across the network to other devices.

The matrix that we have shown as an example has four parameters and four options for each parameter, that makes a total of 256 combinations. Some of them are not consistent - they are not logical, but some of them are, and should be examined.

### 2.1.2. Pitfalls in morphological analysis

Morphological analysis can generate an extremely large number of scenarios, so it is important to discuss within the team which parameters will best describe a particular attack. In case of a large number of combinations, there is a chance that we will not be able to consider all consistent scenarios and will miss some of them due to lack of time. That is why it is important to simplify the analysis phase. If a defender performs morphological analysis individually, he will also increase his own results in the security operations center because he uses a structured approach. He must be aware of limitations to his own knowledge and experience and does not have an influx of new ideas from other colleagues.

## 2.2. Case evaluation

Before testing the threat hunting hypothesis, it is necessary to critically consider whether the scenario is technologically realistic. Do we have arguments to support the answers to each question? It is necessary to think critically, ask more questions and revise scenarios as shown in Table 2.

Table 2: Scenario evaluation

	Question	Argument
1.	Do we have printers in the building with WLAN cards?	Yes, there are dozens of printers on the 15 <sup>th</sup> floor of the building with WLAN card.
2.	Is the air space around the building guarded and monitored?	No, the building does not have a drone surveillance and detection system. The building is located right next to the street where there is a parking lot and a pedestrian zone.
3.	Is it possible to get a drone?	Yes, they are readily available and cheap.
4.	Can a wireless repeater with Wi-Fi hacking software be mounted on it?	Yes, it can. Such systems are sold on the Internet <sup>10</sup> .
5.	Can we crack the printer in such a way that we just log in to the GUI?	Yes, there may be default user/pass parameters, simple password or software vulnerability.
6.	Can firmware with malicious code be upgraded to a printer?	Yes, there are some papers on the subject <sup>11</sup> .

We think like an attacker, wondering if those attack steps are achievable.

## 2.3. Conducting cyber threat hunting

It is important that hypothesis testing is carried out systematically, analyzing all the evidence pointing to a breach. From a technical perspective, the threat hunter needs to prepare the tests that he will conduct, which will help him confirm or disprove the hypothesis of a breach in the system. Again, it will be useful to gather a team of defenders in the security operations center who will suggest from their own experience all the monitoring points and checks that should be carried out in the logs that are collected on the SIEM. Table 3 shows the checklist of evidence that were generated to test the "Flying printer" hypothesis.

*Table 3: Hypothesis testing*

<b>Evidence</b>	<b>Yes/No</b>
Logs from the printer prove that the system administrator was connecting to the printer's GUI.	
Logs from the printer prove that the system administrator was connecting to the printer GUI at unusual times (at night/weekends).	
Logs from the printer prove that the firmware on the printer has been upgraded.	
The logs from the printer prove that there were a lot of failed logins to the GUI.	
Logs from the printer prove that the firmware was upgraded at unusual times (nights/weekends).	
Logs from the printer prove that there have been configuration changes on the printer.	
The logs from the network sensor prove that the printer is scanning the local network.	
Firewall logs prove that the printer is communicating (or trying to) communicate with public Internet addresses.	
Logs from the network sensor prove that the printer is using unusual network protocols (those not typical for printer-to-computer communication). For example, the printer uses DNS for data exfiltration - <i>DNS Tunneling</i> .	
The security service confirmed that no one was in the building during the unusual actions on the printer.	

By checking the evidence, the threat hunter can detect "blind spots" in the security monitoring, so he can conclude that SIEM is not collecting logs from the printer. This should be considered as a possible improvement.

### **3. RECOMMENDED DEFENSES**

With a structured approach, it is possible to clearly define what is missing in the monitoring system that would make it more efficient. To counter the previous attacking scenario, which is possible but less likely, security improvements need to be done.

Hardening components that will prevent attackers from penetrating and exploiting the printer:

- Connect printers to a wired network (LAN), turn off WLAN on them.
- Set complex passwords for the GUI interface on the printer.
- Isolate printers in a separate VLAN and allow only necessary traffic through the firewall.

Actively monitor and detect anomalies:

- Configure the sending of SYSLOG messages from the printer to the SIEM and automatically detect at least the following events: successful logins to the printer, failed logins to the printer, firmware upgrades, configuration changes, USB memory connections.
- Monitor network connections with a network sensor or firewall and automatically detect attempts to connect printers to public Internet addresses; detect unusual protocols and traffic to printers.

#### 4. CONCLUSION

We have shown the use of an application of creative thinking techniques that are of utmost importance for a systematic, structured, and thorough approach in proactive operations carried out by defenders in the security operations center. The attackers have shown their creativity in many hacks so far, and it will undoubtedly remain so in the future. Technology is becoming more complex and present everywhere in our lives, therefore it opens new horizons for the attacker and poses challenges for the defender in times ahead. In addition to creativity, it is important that defenders take a critical approach to all the actions they plan and implement, thus questioning the validity of their ideas and decisions. By generating a larger number of options for each parameter, we noticed that even a small number of them creates many attack scenarios, and it generates a pool of ideas that are important to defenders. This allows defenders to come up with breaches that are possible, might seem less likely, but can have a significant impact on the business and reputation of the organization. By creating the threat hunting hypothesis and testing it, we defined the important monitoring points of individual elements in the computer network. This additionally helps defenders to detect "blind spots", improve the monitoring system by hardening components and turn on monitoring for those devices that no one would otherwise think of.

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## THE MINIMUM WAGE IN THE EUROPEAN UNION IN THE CONTEXT OF THE NEW EUROPEAN DIRECTIVE

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### **ABSTRACT**

*The purpose of this paper is to deepen the research of the minimum wage in the EU over the last decade (2012 – 2022), analyzing the differences between the member states (in terms of nominal minimum wage and minimum wage in purchasing power standard), as well as to look at that problem through the perspective of the adopted in 2022 Directive on adequate minimum wages in the European Union. The analysis is in the context of the expected changes, imposed by this directive, that recommend that the member states adapt the minimum wage to at least 50% of the average and 60 % of the medium wage in their country. Conclusions are made concerning the minimum wage situation in the EU and its relation to the income and social cohesion in the Union. Particular focus is put on the minimum wage's setting and development in Bulgaria in the same period.*

**Keywords:** *minimum wage, purchasing power, European Union*

### **1. INTRODUCTION**

The minimum wage is one of the most criticized tools for labor market regulation. It is argued that the minimum wage increase leads to a higher unemployment rate, labor market interference and attempts to regulate the employers' autonomy. The majority of empirical researches over the past decade have denied the existence of such functional dependencies. On the contrary, the claims that the growth of the minimum wage will destroy jobs that are less productive, leaving the low-skilled workers unemployed, have been rejected by numerous economists (Card and Krueger, 2000; Liu et al., 2016; Dickens et al., 1994; Neumark and Wascher, 2007). The income and living conditions statistics in the EU show that there is not a significant convergence of minimum wages in the EU despite the continuous membership of the Central and East European countries in the Union. Similar to most social indicators in the EU, the minimum wage shows large variations among the different member states, which in January 2022 reached a difference of over 6 times between the country with the lowest minimum wage<sup>1</sup> - (Bulgaria - 363 euros) and the one with the highest minimum wage (2313 euros in Luxembourg) (Eurostat, 2022). As of 1 January 2022, 21 out of the 27 EU member states have applied national minimum wages, making Denmark, Italy, Cyprus, Austria, Finland and Sweden the exceptions. These 21 European countries are classified into three groups based on the level of their national gross monthly minimum wages:

- Group 1 (13 member states), in which the national minimum wages in January 2022 are lower than EUR 1000 per month (Bulgaria (€332), Latvia (€500), Romania (€515), Hungary (€542), Croatia (€624), Slovakia (€646), Czechia (€652), Estonia (€654), Poland (€655), Lithuania (€730), Greece (€774), Malta (€792) and Portugal (€823));

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<sup>1</sup> Minimum wages are presented as monthly rates (in euros) of wages as gross income, ie. before withholding income tax and social security contributions due from employees [12].

- Group 2 (2 member states), in which the national minimum wages in January 2022 were just over EUR 1000 per month (Slovenia (€1 074) and Spain (€1 126));
- Group 3 (6 member states), in which the national minimum wages as of January 2022 were above €1 500 per month: France (€1 603), Germany (€1 621), Belgium (€1 658), the Netherlands (€1 725), Ireland (€1 775) and Luxembourg (€2 257), (Eurostat, 2022).

However, the differences in the minimum wages in the EU member states are significantly smaller if taking into account the differences in the price levels. The aim of this paper is to deepen the research concerning the growth of the minimum wage in the EU over the last decade (2012 – 2021) taking into consideration these differences (nominal minimum wage and minimum wage in purchasing power standard - PPS), as well as to look at that problem through the perspective of the adopted in 2022 Directive on adequate minimum wages in the European Union.

## 2. THE MINIMUM WAGE REGULATION IN THE EU

In October 2020 the European Commission proposed, and in October 2022 the Council of the EU adopted a directive, aiming at ensuring that the workers in the Union are protected by “adequate minimum wages allowing for a decent living”. The institutional framework for taking action at the supranational level in the field of minimum income protection has been laid down with principle 14 of the European Pillar of Social Rights stating that „Everyone lacking sufficient resources has the right to adequate minimum income benefits ensuring a life in dignity at all stages of life, and effective access to enabling goods and services. For those who can work, minimum income benefits should be combined with incentives to (re)integrate the labour market“, (European Commission, 2022). The directive is expected to have positive social and economic effects as increased wealth of workers, reduced pay gap and social inequality, increased market demand, bigger motivation at work and others. It addresses numerous social problems, including:

- A very high share of low-wage earners (who earn two-thirds or less of the average gross hourly income in a given country) in the EU - 15,2% in 2018, i.e one in six employees in the EU is underpaid<sup>2</sup> (Eurostat, 2020a);
- The relatively high share of people in risk of poverty and social exclusion (persons have an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income after social transfers) in the EU - 112.8 million people in the EU in 2017, i.e. 22.4 % of EU population (Eurostat, 2020b);
- The lack of progress in terms of convergence of minimum wages in the EU - a 7 times difference (312 euros in Bulgaria compared to 2142 euros in Luxembourg<sup>3</sup>) (Eurostat, 2020c).
- The rising income inequality due to growing labor market polarization - employment in middle-paid occupations is decreasing while employment in low- and high-paid occupations is increasing;
- The need for a mechanism for regular updating of the minimum wage levels in the EU;
- The need to support workers after the Covid 19 pandemic (Moraliska, 2021a).

The impact assessment of the Minimum wage directive includes a quantitative analysis of a scenario based on a hypothetical increase in minimum wages to 60% of gross average wages.

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<sup>2</sup> The problem with the low-paid workers in some European countries is also connected with the high taxes payable by workers at the lowest wage levels, especially in countries where income tax schedules are flat or where large parts of government expenditures are financed through social contributions. This is why, several countries apply tax concessions or “in-work benefits” to directly support low-wage earners (OECD, 2015).

<sup>3</sup> Monthly rates (in euros) of wages as gross income (before income tax and social security contributions)

It shows that this would improve the adequacy of minimum wages in about half of the member states, which would positively affect between 10 and 20 million workers. In several countries, improvements in the protection of the minimum wage would lead to a reduction in the share of the working poor population, a reduction in pay inequality by more than 10% and a reduction in the gender pay gap by around 5%, as around 60% of the minimum wage earners in the EU are women (European Commission, 2020a). Set at an adequate level, a European minimum wage standard could help to support living standards for the lowest-paid workers and improve the functioning of the European economy, without necessarily entailing negative effects on employment. In addition, it could also lessen the prospects of social dumping (Brischoux et al., 2014). On the other hand, if the minimum wage is set too high, it reduces the preconditions and incentives for rewarding employees for their productivity, and may lead to job losses, informal work or reduced working hours for some workers (OECD, 2015). OECD also pays attention to the fact that the purchasing power of the minimum wages represents a more accurate indicator than the nominal minimum wage in evaluation of the workers' living conditions. The expected negative economic effects include increased labor costs for companies, higher prices and, to a lesser extent, lower profits. However, the impact on companies is expected to be mitigated by increasing the consumption of low-wage earners, which will support the domestic demand. Overall, the possible negative impact on employment of the adopted directive is expected to be limited to 0,5 - 1% of the total employment (European Commission, 2020a). Another important question concerns the weakened role of collective bargaining in the EU. In both public consultations held by the European Commission, the strongest opposition to the proposed minimum wage regulation came from the social partners in the Nordic countries, who feared that any kind of EU minimum wage regulation could undermine their national wage-setting models, which are based on sectoral collective bargaining. On the contrary of that, the directive calls for measures to increase the scope of collective bargaining in the EU. If its scope is below 70%, the member states will have to provide a framework for creating conditions for collective bargaining, by law or by agreement with the social partners, and draw up an action plan to promote it (European Commission, 2020a). It is also expected that the strengthening of the collective bargaining in the EU member states will also stimulate the upward wage convergence in the Union, which is „urgently needed for the correct functioning of the internal market and for the economies of Central and Eastern Europe” and it is publicly stated that „higher wages are necessary to retain a skilled and educated workforce in Central and Eastern Europe and to stop the brain drain” (ETUC, 2022). Last, but not least, in a paper prepared for the European Parliament the authors also pay attention to the fact that „increasing minimum wages can only have a limited impact on poverty levels, as poverty often results from low working hours rather than simply low hourly wages, amongst other factors” (Raitano et al., 2021).

### **3. GENERAL DISCUSSION ON THE MINIMUM WAGE SETTING**

The biggest challenge for the implementation of the adequate minimum wage directive is the methodology, which the members states will apply in the minimum wage setting. The directive does not provide a definition, but only stipulates that the minimum wage must ensure a „decent standard of living” (European Commission, 2020a). A balanced approach is necessary because a minimum wage is a redistributive tool with both benefits and costs. If set high enough, minimum wages can increase the earnings of low-paid workers, reduce the number of “working poor”, reduce the gender pay gap in the lower part of the distribution, and reduce overall wage inequality (or limit its increase). If set too high, minimum wages can be counterproductive, setting off price inflation, harm employment, and turn out to be unenforceable by small and medium enterprises (OECD, 2015). One option is to apply the Living wages approach. Its main goal is to ensure that every worker can have a decent life through their pay. The approach involves the calculation of an approximate wage for different types of households (and regions),

which is needed to cover a certain basket of goods and services that guarantees an acceptable standard of living. Although the composition of such a basket is specific to the time and place, it usually includes the costs of: low-cost meals, basic housing, clothes and shoes and other decent living expenses, such as transport, care and education for children, health, recreation and cultural activities, communication and personal care (Anker, 2011). The International Labor Organisation also supports the idea that the needs of workers and their families can be assessed or calculated through the concept of a minimum living wage. The approach reflected in ILO Convention No. 131 calls on policy makers to take account of: a) the needs of workers and their families, taking into account the general level of wages in the country, the cost of living, social security benefits, and the relative living standards of other social groups; and b) economic factors, including requirements of economic development, levels of productivity, and the desirability of attaining and maintaining a high level of employment (ILO, 2020). Another option is to adopt a reference value, using the Kaitz index theory, which is an economic indicator derived from the ratio between the nominal minimum wage and the median wage. Separately, by analogy with poverty research, it is assumed that the minimum wage of 60 percent of the median wage is one that allows a full-time worker to avoid living in poverty<sup>4</sup>. Most members of the European Trade Union Confederation support the goal of minimum wage at the amount of at least 60% of the median wage (ETUC, 2020). The International labour organization also states that the economic effects considered in the Living wages approach depend on the proportion of wage-earners affected by a certain minimum wage, and can be evaluated through indicators such as ratio of minimum wages to median wages (ILO, 2020). The European Commission's directive does not require member states to increase their minimum wages to a certain level of gross average of median wages. However, the directive invites member states to use indicative benchmarks to guide their assessment of adequacy in relation to the overall level of gross wages. For that, it does not prescribe a specific indicator, but it states that the use of indicators commonly used at international level, such as 60% of the gross median wage and 50% of the gross average wage, can help guide the assessment of minimum wage adequacy in relation to the gross level of wages (European Commission, 2020a). Based on OECD data, Moraliyska found that in 2019 the statutory minimum wage covered at least 50% of the average wage only in one of the 19 EU Member states (France) for which relevant information is available (Moraliyska, 2021b). Similarly, in 2019 the statutory minimum wage covered at least 60% of the median wage only in two of the 19 EU Member states (France and Portugal) for which information is available. The data showed that the statutory minimum wage did not provide enough income for one minimum wage worker to reach the at-risk-of-poverty threshold in most EU countries. In addition, in general specific groups of workers are excluded from the minimum wage. The average threshold, however, does not ensure that the minimum wage provides for an adequate standard of living. The reason is that some member states have a high level of income inequality, which leads to a polarized wage structure of the population (the upper part of high-income people raise the average wage, but there is a high concentration of workers at the bottom of the spectrum, which decreases the average value). As a result, the relatively high Kaitz indices do not reflect adequate minimum wage minimums. Additional criteria are needed to set a fair minimum wage, namely regulation that uses both average and median wages as benchmarks for the adequacy of minimum wages, which as indicators would be significantly more in line with the economic and social reality. Applying a double threshold (60% of the median and 50% of the average wage) would lead to an increase - sometimes significantly - in the minimum wage in almost all EU countries with a statutory minimum (Müller, T., Schulten, T., 2020).

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4 According to Eurostat, the people at risk of poverty are those with equivalent disposable income (after social transfers) below the at-risk-of-poverty threshold, which is set at 60% of the national median disposable income after social transfers.

#### 4. NOMINAL MINIMUM WAGE IN THE EU. BULGARIA'S PERFORMANCE

In 2022 in the European Union, the minimum wage in nominal terms is the highest in Luxembourg and the lowest in Bulgaria (Figure 1). The ratio between minimum wage and average wage is considered as important benchmark for those countries with statutory minimum wage and can be used for assessing the government income policy.

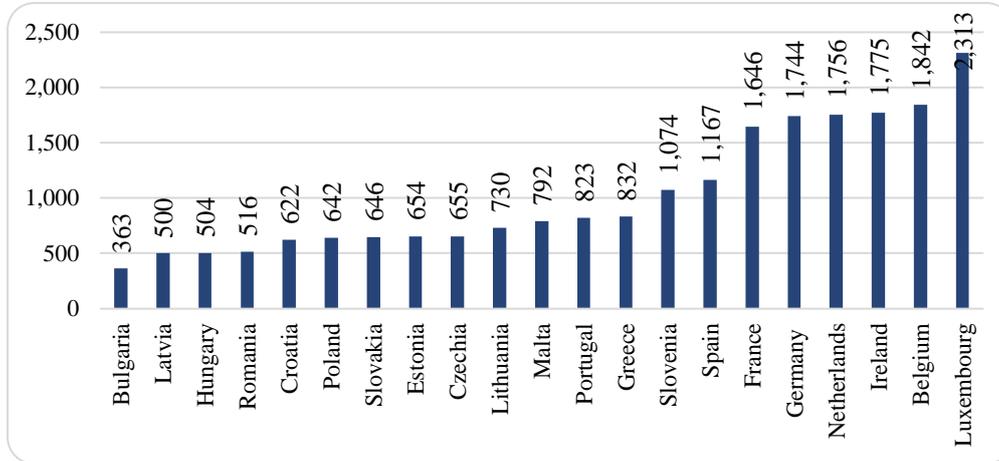


Figure 1: Nominal minimum wage in the EU in 2022 (in euro)  
 (Source: Eurostat, 2022)

In nominal terms, the minimum wage in Bulgaria has increased by 215 euros over a period of 11 years (2022 – 2012), which makes an average of 19,5 euros per year. In comparison to the other EU member states, where there are statutory minimum wage levels, the growth rate of the minimum wage in Bulgaria is quite low. This means that there is no evidence of a real catch-up income policy that would lead to a real convergence in the levels of wages of workers in Bulgaria and workers in the majority of the EU member states. For example, in the same period, the minimum wage in Spain increased by 418 euros, in Luxembourg by 512 euros, and in Romania by 358 euros (Figure 2). Due to the low absolute level of the minimum wage in Bulgaria, the growth rates seem high at first glance, but as far as real convergence at an absolute level is concerned, divergent processes are evident, especially in the last two years with record-high inflation in the country that significantly outpaces the income growth (minimum and average wages).

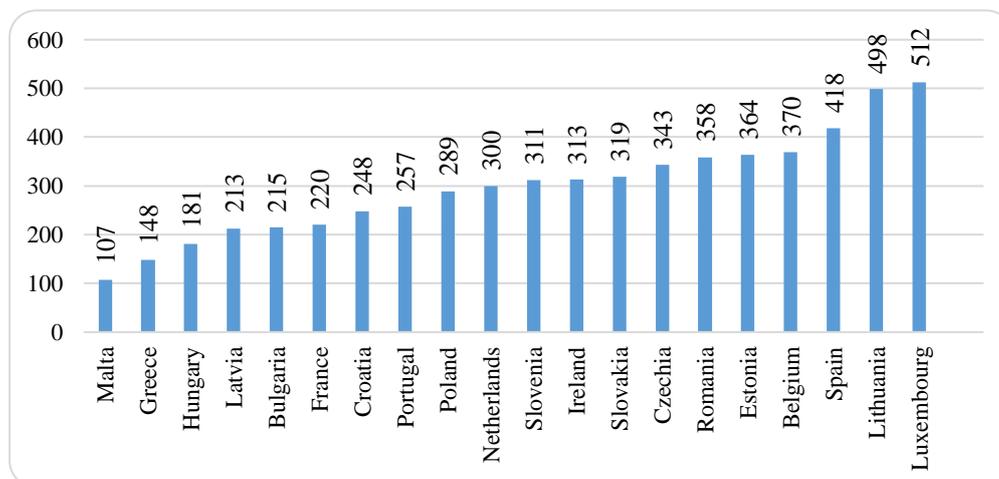


Figure 2: Change (in euro) in nominal minimum wage in the EU in 2022 compared to 2012  
 (Source: The authors with Eurostat data from Eurostat, 2022)

In Bulgaria there is a single minimum wage, which applies to all categories of workers and all economic activities. The minimum wage is set by the Council of Ministers. The proposed level of the minimum wage reflects the rate which is laid down in the medium-term budget forecast. The process of setting the minimum wage is not guided by approved set of criteria. Social partners has insisted over the years for developing mechanism for setting the minimum wage but the position of trade unions is challenged by the employers' organizations. According to the National Statistical Institute of Bulgaria (2022), in the end of 2021, the minimum wage employees are about 478 thousand persons and represent 23.4% of all employees. In the beginning of 2016 the minimum wage employees were about 316 thousand persons, or about 14% of the employees. To a certain extent, the increase in the number is a consequence of the increase in the size of the minimum wage - this is due to all those employees in low-paid economic activities (having a wage close to minimum wage level), as well as too those who constitute the grey sector. The minimum wage employees are unevenly distributed among sectors. Thus, 26% of the employees in the "Processing Industry" sector are hired on minimum wage, while 23,6% of the employees in the "Trade" sector are minimum wage workers (NSI, 2022). According to the data of the National Statistical Institute, when the Minimum wage/average wage ratio showed a downward trend, mainly due to the freezing of the amount of minimum wage for more than two years, the employment rate of low-skilled workers marked a constant decline until reaching its absolute minimum of 36.2% (Table 1). The increase in the minimum wage in Bulgaria during the period 2013 - 2019 (when the Minimum wage/average wage ratio increased to 44 – 44,2%) did not affect negatively the employment rate of the low qualified workers. On contrary, it can be considered that the increase actually stimulated the employment within this group.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment rate of low qualified workers (%)	46,5	45,0	39,8	36,7	36,2	36,9	38,6	39,0	39,2	44,4	46,2	51,2	48,1
MINIMUM WAGE/AW ratio	40,4	39,4	37,0	36,4	38,7	40,0	41,4	42,1	44,3	44,3	44,5	44,2	43,9

*Table 1: Employment rate of low-qualified workers and the ratio of minimum wage to average wage*

*(Source: National Statistical Institute of Bulgaria, 2022)*

In recent years, there has been a consistent growth in the minimum wage, and compared to 2010, the rate has nearly tripled (from 107 euro to 363 euro in 2022). Despite the registered increase, the minimum wage level remains too low to provoke a significant change in the living standard of the population. The minimum wage growth rate can be defined as insufficient, as the minimum wage level does not equal the income needed to cover the cost of living.

	2016	2017	2018	2019	2020	2021	2022
Average wage (BGN)	948	1037	1146	1267	1391	1551	1743
Minimum wage (BGN)	420	460	510	560	610	650	710
Difference, BGN	528	577	636	707	781	901	1033
Minimum wage as % of average wage	44,3	44,4	44,5	44,2	43,9	41,9	40,7

*Table 2: Difference between the minimum and average wage in nominal terms in Bulgaria, 2016 – 2022*

*(Source: National Statistical Institute of Bulgaria, 2022)*

As can be seen from the data in Table 2, although nominal the minimum wage in Bulgaria is increasing, the difference between its level and that of the average wage in the country increases every year. This is a proof that, on first place, the growth rate of the average wage in the country is higher than the growth rate of the minimum wage, which leads to an increase in the difference between the two values in absolute terms. Secondly, the rate of growth of the minimum income does not correspond to the rate of growth that the market economy imposes and that the recorded growth in the minimum income in Bulgaria to date does not lead to the necessary convergence that would allow the minimum income to reach 50% of the average wage. As a whole, despite the negative impact of the pandemic, modest minimum wage increase was achieved. In 2022 the national minimum wage increased by 9,2% (from EUR 332 to EUR 363) thus realizing the increase foreseen in the Ministry of Finance medium-term budget forecast. As of September 2022, the annual inflation reached 17,6% and actually outpaced the minimum wage growth. This led to a decline in the purchasing power of minimum wage workers for first time in a 10-year period. In accordance with the new Minimum wage directive, the trade unions in Bulgaria insist on the establishment of a ratio between the minimum and the average wage equaling to at least 50%. However, the ratio has stagnated in the period following 2016 (varying from 43,3% to 44,5%). In 2021, the ratio of minimum wage to average wage marked a downward trend, reaching 41,9%.

## 5. MINIMUM WAGE'S PURCHASING POWER IN THE EU

In any case, apart from the nominal level of the minimum wage, what is also important is its purchasing power against the background of the general level of prices in the relevant national economy. It is an important concept of macroeconomic analysis that allows a comparison of the amount of goods and services from a given consumer basket that can be purchased in two different countries for a given amount of money.

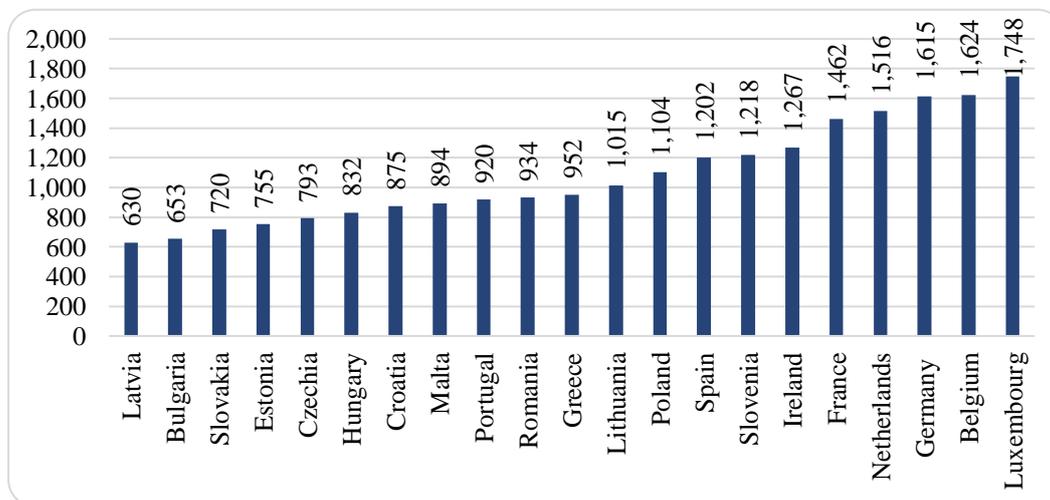


Figure 3: Minimum wage in purchasing power standard in the EU in 2022  
 (Source: Eurostat, 2022)

Figure 3 shows that Bulgaria moves from last to penultimate place when we measure the minimum wage in PPP (purchasing power parity), eliminating the price differences between individual countries. In absolute terms, the country is last according to nominal minimum wage, while in terms of minimum wage in PPP, it is slightly ahead of Latvia, which is currently the country with the lowest purchasing power of the established minimum wage. For comparison, the purchasing power of the minimum wage in Croatia is 34% higher than the minimum wage in Bulgaria, in Greece it is 46% higher, in Slovenia - 86%, in the Netherlands - 132%, and in

Luxembourg - 267%. Bulgaria has ratified ILO Convention 131 and thus, when setting the minimum wage, it is supposed that the policy makers take into consideration both: social factors (i.e. the needs of workers and their families, taking into account the general level of wages in the country, the cost of living, social security benefits, and the relative living standards of other social groups) and economic factors (i.e. economic development, levels of productivity, employment level). In Bulgaria, the Confederation of Independent Trade Unions in Bulgaria (CITUB) is the only organization that calculates the living wage in Bulgaria and insists on the comparison of the minimum wage rate to the living wage. The employers organizations focus on economic criteria such as labour productivity and unit labor cost when debating on the minimum wage. In addition, as mentioned above, the list of criteria set in art. 5 of the Directive on adequate minimum wages provides for adoption of the cost of living concept as a basis for calculating the purchasing power of the minimum wage.

## 6. CONCLUSION

It can be concluded that the differences in the minimum wages in the EU member states have not decreased in the last decade (2012 – 2020). However, they seem smaller when expressed in the purchasing power standard (PPS). While the differences in the levels of minimum wages between the EU Member States with the highest and lowest minimum wages are in a ratio of 1:6,4, i.e. the highest minimum wage in the EU (Luxembourg) is 6,4 times higher than the lowest minimum wage in the EU (Bulgaria), when expressed in PPS the ratio between the same countries is 1:2,7. As a whole, the difference between the highest and lowest minimum wage expressed in PPS is 2,8 times (1748 euro in Luxembourg vs. 630 euro in Latvia). The European minimum wage policy faces major obstacles, both as a result of the diversity of national regimes and minimum wage levels in the member states, and in terms of differing views, even within the European trade unions. The main challenge is related to the approach recommended by the directive that it should cover a certain percentage of the national average or median wage. Furthermore, the value obtained does not guarantee that it will effectively protect low-paid workers. The other key issue is the need for measures to strengthen the weakened national collective bargaining systems in order to increase their coverage, as they preserve and expand national industrial relations and wage setting systems. The Adequate minimum wage directive in the EU, which was recently overwhelmingly adopted by the European Parliament and the Council of the EU, is a good basis for national governments to formulate a fair mechanism to determine the minimum wage. Such a mechanism would be appropriate to take into account, above all, the monetary expression of the standard of living in the relevant economy, taking into account the national specifics. Convention 131 /Art. 3a/ of the ILO makes exactly such a recommendation, as does the European Social Charter in Article 4. The participation of the social partners in the preparation of this mechanism, incl. in the formulation of a lower threshold of the ratio of minimum to average salary to the amount of 50%, is of key importance for the sustainable transposition of the directive, incl. in the part concerning the collective bargaining. The results of the conducted descriptive comparative analysis between the level of the minimum wage in Bulgaria and the other EU member states show that the country has to make a lot of efforts to achieve decent and fair wages, as well as to approach the average indicators measuring labor compensation in the EU. The real minimum wage convergence is at very low level, both in nominal terms and in purchasing power parity, which keeps the country far from its goals before EU accession, including integration of the labor market.

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## **DIVERSIFYING INCOME OF THE UBER PLATFORM AS AN INTRODUCTION TO THE MATURE PHASE OF BUSINESS**

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### **ABSTRACT**

*The aim - of the paper is to analyse the diversification of the revenue of the Uber platform and the change of business policies according to the revenue structure and in different geographical segments. Methodology/Design – the research is structured according to the official reports of the corporation and specifically investigates the change of business paradigm aimed at revenue growth in the Eats and Freight categories. In addition, the revenue trend by geographic segments is also analysed. In the financial analysis, the financial parameters that indicate the change in income and profit of the corporation were selected. The analysis of changes in the structure of income according to categories and geographical segments includes models of quantitative and qualitative analysis. Results - the research proved significant changes in the corporation's income structure and indicated the basic income trends according to geographical areas. Conclusion - the corporation's income structure is significantly changing, which indicates, on the one hand, a change in the business paradigm, and on the other hand, diversification is a transition to a mature phase of the corporation's operations.*

**Keywords:** Covid 19, disruption, platform economy, Uber

### **1. INTRODUCTION**

Uber was founded in 2009 in San Francisco, and the idea arose from the need for fast and safe passenger transportation by car in densely populated and hilly areas of the city (Kittilaksanawong, Afanyan 2018). The company was founded as a platform that enables user interaction on both sides of the platform, which makes it a platform economy model (Parker et al. 2016; Moazed, Johnson 2016). The platform was founded under the name UberCab, and its core activity was the transportation of passengers in luxury cars. Very soon after its establishment, the platform expanded its activity into the classic taxi transport industry. According to the business model, it is part of the post-industrial development model, that is, it belongs to the sharing economy, which is defined as a model in which people jointly use underutilized resources in new and innovative ways (Cohen, Kietzmann 2014). By entering the classic taxi industry, the platform used a model of disruptive innovation (Lozić 2020), which directly shook the foundations and called into question the future of the classic taxi industry (Botsman, Rogers 2011). The platform is currently the largest global network for organized car transport. It operates on all continents and diversifies its activity into different models of passenger and goods transportation.

## 2. LITERATURE REVIEW

Shortly after launching in San Francisco, in October 2010, UberCab encountered its first roadblocks, as the city administration issued a cease and desist order as a taxi company without the necessary licenses. After changing its name to just "Uber," the company was able to circumvent the regulation because, unlike taxi operators, Uber pre-arranged pickups for users who know the price for the target destination in advance (Ztreet 2015). By the end of 2011, Uber had collected 49.5 million US dollars from investors who were private individuals interested in investing in profitable businesses, but also global corporations, including The Goldman Sachs Group and Bezos Expeditions. In March 2016, Uber was valued at more than 50 billion dollars, which at that time made it the most valuable "unicorn" in the world (Kittilaksanawong, Afanyan 2018). Uber developed using a disruptive strategy in the already existing taxi service industry. The corporation uses the services of non-professional drivers who drive in their own passenger vehicles, picking up passengers via a smartphone app. Having already pre-loaded their credit card information via a smartphone app, users digitally paid for their fare after the ride was over (Kittilaksanawong, Afanyan 2018). In fact, the idea of ride sharing would not have been possible without the development of smartphones as a new technology. As smartphones are now embedded in people's daily lives, it has changed the way people live, communicate and transact (Wang et.al. 2014). Unique characteristics of the smartphone include diversification of input options, Internet access, and location functions (Want 2009). Uber uses a mobile application that provides an online ride sharing network by connecting independent drivers and customers (Hall et.al. 2015). After only five years of existence, Uber has taken precedence over traditional taxi carriers employing more than 40 million active drivers worldwide (Kokalitcheva 2016), and already in 2017 it was ranked in the 20 most popular applications according to downloads in the world (Min et.al. 2018). Uber's business model of corporate development in the platform economy model quickly became a template by which corporations from various industries sought to develop their business using disruptive development strategies. Several other companies in different industries tried to imitate Uber's "peer-to-peer" business model (P2P), and such a way of corporate development remained permanently recorded under the term "uberization" (Kittilaksanawong, Afanyan 2018). Economic analysts agree that Uber has gained a competitive advantage over the taxi industry not by delivering superior service, but by being able to circumvent loopholes in law and enforcement through technology (Zwick 2017). The platform successfully uses technological innovations to: a) undermine employment laws and other regulations, (b) transfer risk from the industry to the individual driver-owner of the vehicle, and (c) lower wages and labour standards in the industry, which increases firm profitability (Berger et al. 2017). Ride-hailing company Uber has achieved extremely rapid global expansion by manoeuvring through legislation and regulations set by state governments, market regulators and competitors. The rise of the company was based on a well-thought-out strategy of action in the model of an innovator that disrupts the market through user-friendly technology and the use of the sharing economy (Dudley et.al. 2017). The transport organization in the platform model has a disruptive effect on the existing industry, taking advantage of the value chain in disruptive industries (Lozić 2017). Berger et al. (2017) point out that Uber is not really an example of the information technology revolution, but this does not mean that the classic taxi model should be defended. Harris and Krueger (2015) warn of a situation in which the synthesis of two similar models reduces social well-being in the future, as a direct result of technological progress. Min et al. (2018) conducted research on the habits of tourists and proved that Uber is the most used application, or service in the tourism sector. Cramer et al. (2016) demonstrated that Uber's flexible labour supply and variable pricing model better matches supply with demand during the peak hours of the day. Dudley et al. (2017) warn about the different business results of Uber in the global market.

While Uber is the leading transportation platform in the US, and has about 65% share in the industry, in Asia and Israel it encountered great competition and problems in business development. It was opposed in Southeast Asia by the local carrier Grab, in India by Ola, and in Israel by Gett. The growing losses during development are a direct result of Uber's aggressive expansion efforts in emerging markets such as China and India, where the company has sought to gain market share against strong local competitors. In China, the world's largest transportation market (Shih 2015), Uber did not face major regulatory challenges (Butt 2016), but still spent several billion dollars to catch up with its local rival Didi through a price war. In 2015, Apple Inc. invested \$1 billion in Didi, after which the corporation announced that it once again controlled 85% of the Chinese market (Love 2016). In China, the business situation for Uber was the most difficult, due to the continuous price dumping of the local carrier Didi Chuxing, which resulted in the merger of the two corporations. This was a lower price, or a lower cost, than a complete withdrawal from China (Dudlay et.al. 2017). In the context of business costs, Swofford (2020) investigates the costs of entering different markets and develops models to choose expansion models. The research included the operations of Uber and Lyft in order to compare the results of the research. Alemia et al. (2019) investigate the preferences of young people, i.e. Generation Z, in the choice of transport model. Changes in consumer habits significantly contributed to the development of the platform economy and entrepreneurial strategies based on disruptive strategies (Lozić et.al. 2019). Morris et al. (2020) proved that drivers are significantly more satisfied with independent rides in vehicles than sharing those rides with other passengers. A large number of drivers stated that they prefer independent driving because of the unpleasant situations that can happen between passengers. On the one hand, Uber is a global corporation with great potential for future growth, and on the other hand, it faces exceptional challenges and costs in the global market outside of North America. The paper analyses the model of corporate income diversification as a result of a change in the business paradigm.

### **3. METHODOLOGY AND RESEARCH QUESTION**

The research and analysis was made on the basis of official data published by the corporation, which is an official document that serves as information for investors on the stock exchanges. The document is published under the name Uber Annual Report, and inside it is a report on the business "Form 10-K". In addition to the official report of the corporation, the work uses scientific papers that are relevant in the research and analysis of the topic. The analysis is based on three research questions:

- What was the financial result of the corporation in the last six years?
- What is the trend of passenger transportation in the analysed financial period?
- In what way was the corporation's business diversified in the analysed period?

By analysing the financial results of the last six years, Batoola et al. (2021) empirically proved how the pandemic and the "closure" had a different effect on the financial results of corporations in the platform model. For example, Netflix and Spotify were hardly affected by the pandemic, while corporations from other industries, i.e. transportation, tourism and catering services, significantly felt the consequences of the pandemic. Honga et al. (2020) investigate the models and forms of use of transport services and multi-homing models, Agarwal et al. (2021) investigate the conditions of work flexibility and wages, i.e. wages of drivers in a contractual relationship, and Zwick and Spicer (2019) the time period of employment of drivers on individual platform. The paper uses data from the corporation's profit and loss account and statistical data on the trends of platform users in the selected time period. Selected financial data are processed using the method of financial analysis and statistical trend analysis.

Selected data on the trend of the number of users and the use of the application on smartphones are processed using the statistical trend method so that they can be compared with the results of research on selected financial parameters.

#### 4. DATA ANALYSIS

Research and analysis is divided into three basic segments. In the first segment, selected financial parameters are analysed. In the second segment, data on the trend of users and their use of applications is analysed. In the third segment, changes in the number of uses of the corporation's services on the global market are analysed. All three research segments are divided according to fundamental research questions. The final analysis was done in the ANOVA model to verify the existing research results.

##### 4.1. Financial analysis

Research and analysis of the financial results of the corporation's operations covers a period of six years, i.e. from 2016 to 2021. In the analysed period, the corporation's revenues grew by 454%, that is, from 3,845 billion dollars to 17,455 billion dollars. In the same period, the corporation's gross profit increased by 501%. A particularly large growth in gross profit was recorded in the last analysed period, which indicates the rapid recovery of the corporation from the consequences of the global pandemic. Revenues have grown continuously, except in 2020 when they fell as a result of the global shutdown due to the Covid 19 pandemic. Despite the continuous growth of revenues, the corporation records a negative result from operating business as well as total losses in business. In the context of the analysis of the impact of the global pandemic on the corporation's profit, it could be concluded that it had a positive effect on the corporation, because the losses have decreased or are decreasing in the last two analysed periods. The results of the research are shown in table 1.

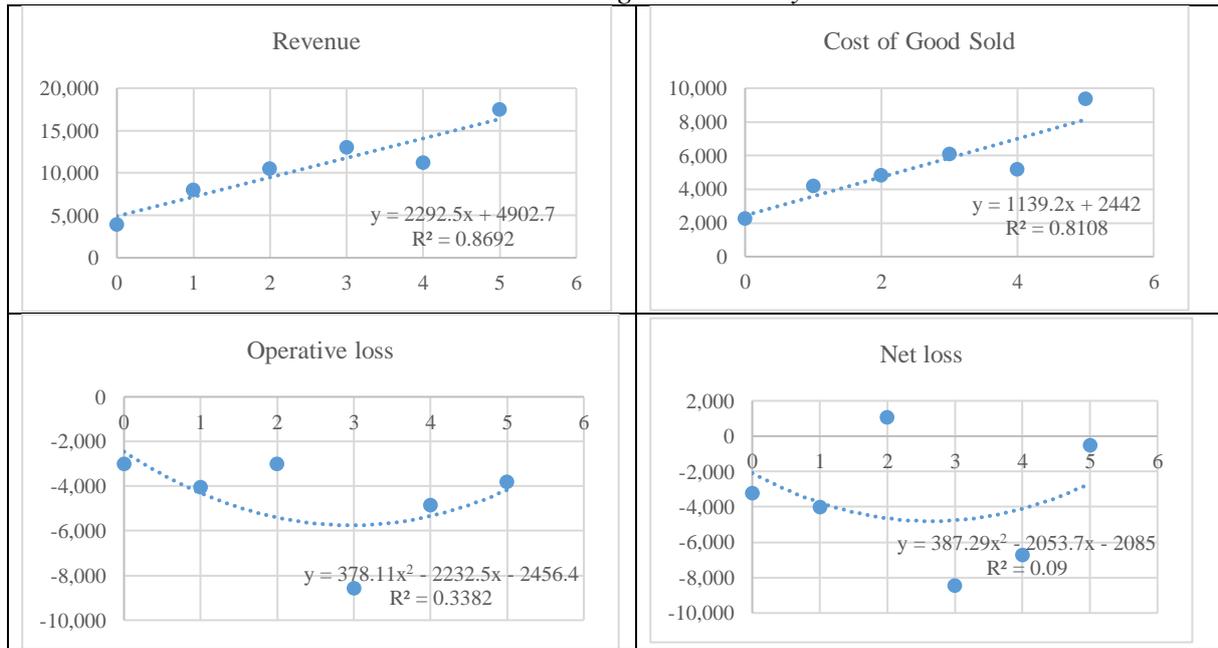
*Table 1: Selected financial parameters (\$; mill.)*

	2016	2017	2018	2019	2020	2021
<b>Revenue</b>	3.845	7.932	10.433	13.000	11.139	17.455
<b>Cost of goods sold</b>	2.228	4.160	4.786	6.061	5.154	9.351
<b>Gross profit</b>	1.617	3.772	5.647	6.939	5.985	8.104
<b>%</b>	42%	48%	54%	53%	54%	46%
<b>Operative loss</b>	-3.023	-4.080	-3.033	-8.596	-4.863	-3.834
<b>Net loss</b>	-3.246	-4033	1029	-8478	-6754	-533

*Source: Uber Annual Report; own illustration*

Trend analysis of selected financial parameters indicates the impact of the pandemic on the corporation's financial operations. Total revenues and direct costs were interpreted by linear trend regression. Total income is defined by the linear trend equation  $y = 2292.5x + 4902.7$ , with the coefficient of determination  $R^2 = 0.8692$ . In the fifth analysed period, the inflection point is located below the direction curve, which indicates a strong impact of the pandemic on business results. Average annual income growth was 21.56% ( $s=21.56$ ). Direct costs are defined by the linear trend equation  $y = 1139.2x + 2442$ , with the coefficient of determination  $R^2 = 0.8108$ . The coefficient of determination is lower than that of total income, but it is still sufficient for the correct interpretation of the trend ( $R^2 > 0.8$ ). The average annual growth of direct costs was 21.54% ( $s=21.54$ ). A lower coefficient of determination of direct costs, than the coefficient of determination of total revenues, indicates a greater deviation of direct costs from the regression line than with total revenues. Direct costs fell more than the fall in total revenues, because the vehicles are not the property of the corporation and the cost during the pandemic was transferred to the owners of the vehicles.

Table 2: Trend regression analysis



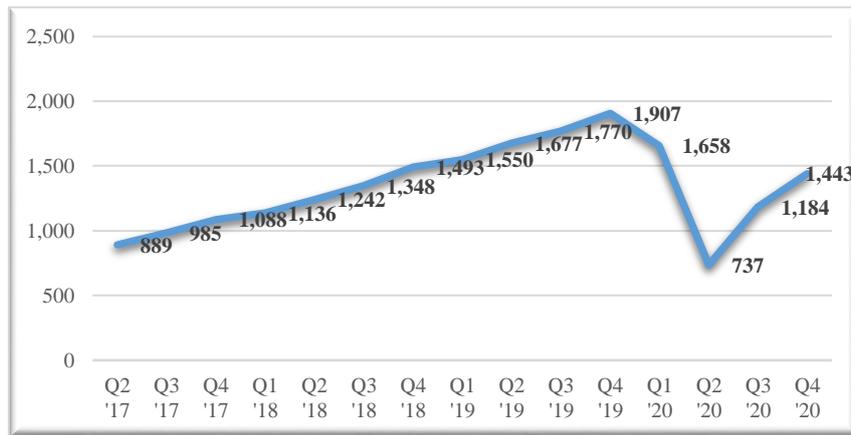
Source: Uber Annual Report; own illustration

#### 4.2. Ride-hailing analysis

The idea of transporting passengers in hilly San Francisco very quickly spread throughout the USA, and then globally. The Lyft platform followed the Uber development model, what is now colloquially understood by the term "uberization", but it never managed to achieve a share of more than 35% of the market in the US. Research has shown that the number of Uber and Lyft rides in San Francisco makes up 15% of the total number of rides, that is, about 170,000 rides are made per day (Alemia 2019). The trend in the number of rides on the global market follows the trend in total revenue. The number of rides increased continuously in the fourth quarter of 2019, and then fell sharply in the first and second quarters of 2020. The growth trend analysis determined that the number of rides per quarter from the second quarter of 2017 to the fourth quarter of 2019 grew at an average rate of 7.22%, i.e. annually at an average rate of 39.2% (s=39.2%). The closing of the farms and the transition to a new model of life and work abruptly stopped the growth of driving in the corporation. The results of the research are shown in Figure 1. The curve indicating the movement of the number of application users (monthly application users means that they use transportation services at least once a month) is almost mirrored according to the movement curve of the number of rides. The number of users of the application grew until the fourth quarter of 2019, and then fell in the first and second quarters of 2020. In the fourth quarter of 2019, Uber had 111 million active monthly users, with 1.9 billion rides. The results of the research are shown in Figure 2.

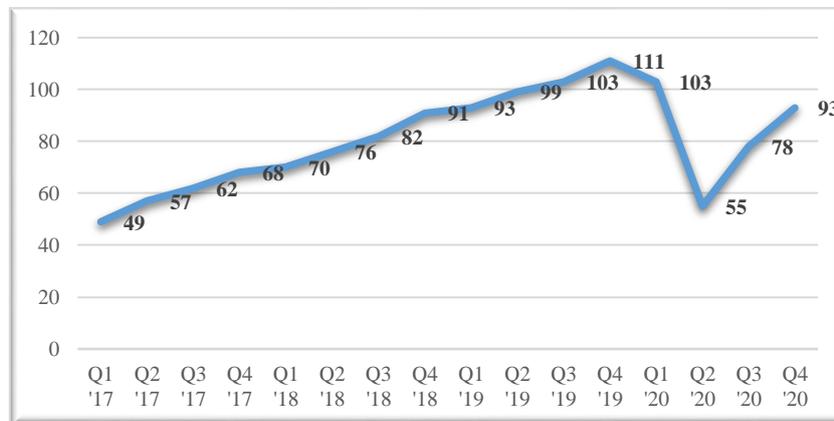
Figure following on the next page

Figure 1: Uber's number of rides worldwide by quarter 2017-2020 (mill.)



Source: Uber Annual Report; own illustration

Figure 2: Monthly users of Uber's ride-sharing app worldwide 2017-2020 (mill.)



Source: Uber Annual Report; own illustration

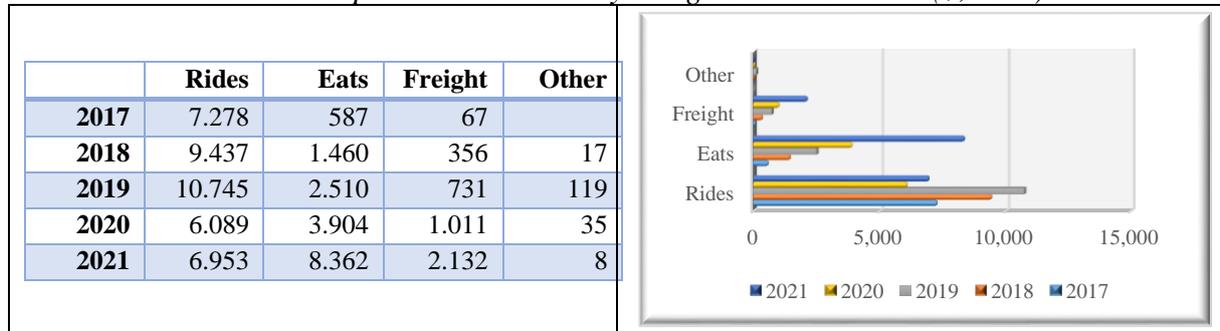
Sherman (2022) warns that the prices of the corporation's transportation services have grown significantly in recent years, and that they no longer meet the established assumption that consumers get the same or more at a lower price than a classic taxi service. Likewise, Uber has almost doubled the average cost of transportation in the US over the past two years. Users especially point out the price of transportation from the airport to the city center, which exceeded the price of a conventional taxi service (Sherman 2022). All this did not compensate for the losses that Uber has from regular business. Stock prices rebounded sharply in 2022, but this was more a result of increased demand for rides after the pandemic than business results and the number of app users (Ponciano 2022).

#### 4.3. Diversification trend analysis

The crisis caused by the global development of the pandemic forced the corporation to diversify its business. The corporation's owners have revealed plans to eventually roll out a driverless car service by 2020. Industry sources said Uber is considering partnering with South Korea's largest automaker, Hyundai Motor Company, to develop the service (Kittilaksanawong, Afanyan 2018). Hyundai Motor became the first company in South Korea to receive a license from the government to test its Genesis self-driving premium sedan on real roads in March 2016 (Won-Myung 2016). Taking into account the progressive saturation of the ride-hailing app market, Uber began to diversify into other on-demand markets. A division called UberEverything was organized, tasked with identifying opportunities outside of its ride-hailing business.

In 2015, the company launched UberRush, an on-demand package delivery service for online retailers in San Francisco, Chicago and New York. In March 2016, the food delivery app UberEats was launched (Lien 2016). The corporation diversified horizontally and started delivering food to homes, and then also other necessities.

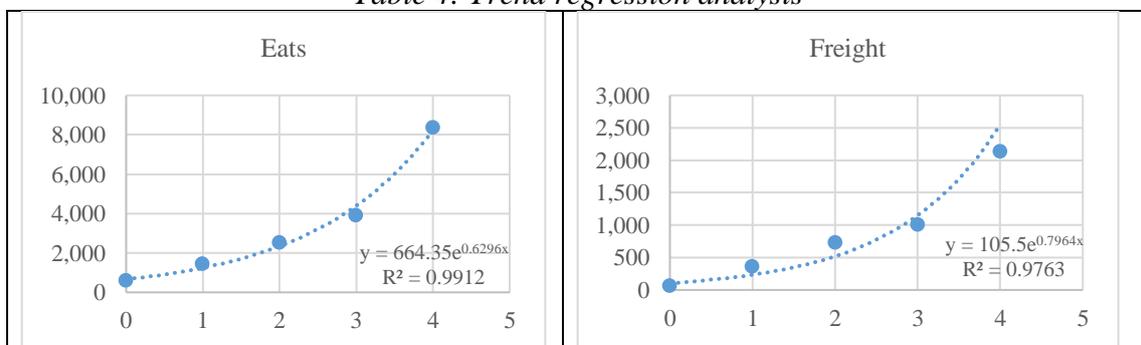
Table 3: Corporation revenues by categories 2017-2021. (\$; mill.)



Source: Uber Annual Report; own illustration

The results of the research indicated a significant change in the structure and trend of income in diversified activities. Revenues from driving passengers correspond to the trend of total revenues. They grew until the end of 2019, after which they fell in 2020 and started growing again in 2021. In contrast, revenues from the delivery of food, household goods and other forms of delivery continued to grow. The trend of income of those two segments is different from the trend of total income. In addition, in 2021, food delivery revenue was higher than driving revenue, which is a very significant change in the corporation's revenue structure. The results of the analysis are shown in table 3.

Table 4: Trend regression analysis



Source: Uber Annual Report; own illustration

The results of the research on income from the delivery of food and other necessities showed interesting results. While total revenues grew linearly, that is, the analysis was made by linear regression of the trend, revenues from Food and Delivery grew exponentially. The growth trend in the Food segment is explained by the exponential trend curve  $y = 664,35e^{0,6296x}$ , with a coefficient of determination of  $R^2 = 0.9853$ . Average annual revenue growth in this segment was 87.7% ( $s=87.7$ ). The revenue growth trend in the Delivery segment is explained by the exponential trend curve  $y = 105,5e^{0,7964x}$ , with the coefficient of determination  $R^2 = 0.9204$ . Average annual revenue growth in this segment was 121.8% ( $s=121.8$ ). The revenue growth trend, even when we omitted the year 2020, has a linear trend, in contrast to these two segments that have an exponential trend, which indicates significant changes within the corporation's revenue structure. The results of the research are shown in table 4. Sherman (2022) points out that the corporation is in the final stages of launching the Uber Journey Ads application, which

it will join the Uber Eats segment in order to develop a program for processing and distributing advertising content on the Uber application with the aim of further increasing revenue. Research has proven that the number of trips increases in urban areas with high traffic density, and individuals who are more afraid for their safety are less inclined to use public transport services (Alemia 2019). Although the form of transportation in the form of a platform with contract drivers enriches the offer and lowers the prices, there is a great concern about even more traffic congestion as new cars are constantly added to already existing traffic jams (Henao, Marshall 2018). The increasing number of cars contributes to increasing congestion, but also to increasing pollution. In this context, Jenn (2020) analyses the possibilities of developing transportation through a platform with electric vehicles and investigates the capacities of the electrical network necessary for such a transformation of energy use. Li et al. (2019) investigated the impact of the Uber, Lyft and Didi corporations on traffic connectivity and the passenger transportation network and proved that the network is more efficient when transportation prices fall below the lower limit of the driver's earnings, as it allows the platforms to invite more drivers to ride, and provides users with faster, better quality and cheaper service. The results of the research, as well as other controversies about transportation services, prompted various lawsuits, especially by cities against the platforms, but they all ended unsuccessfully. Only New York City was successful in a court case and has data on the minimum cost of driving that is profitable for drivers (Hsieh 2018).

Table 5: Uber revenue by geographic segment (billion; \$)

	U.S. and Canada	Latin America	EMEA	APAC*
2017	4,37	1,65	1,16	0,76
2018	6,52	2,00	1,72	1,03
2019	8,47	1,86	1,85	0,82
2020	6,61	1,30	2,09	1,15
2021	10,09	1,42	3,21	2,73

Source: Uber Annual Report; own illustration

In the analysed five-year period, from 2017 to 2021, the US market generated the highest revenues, and the revenue trend is the same as the overall trend. The situation is almost identical in the markets of South America and Asia and the Pacific. In the market of Asia, Pacific and Australia, revenues fell already in 2019 because the pandemic first affected China, and then spread globally. In the development of the market of China and Asia as a whole, the corporation has spent millions of dollars, and the total income is less than the income in Europe. In addition, the income from Asia, only in the last period, is higher than the income from South America. Revenues from Europe, Africa and the Middle East are continuously growing and account for about a third of revenues in North America. They are also higher than the income in Asia and the Pacific. The results of the research are shown in table 5. The analysis of business results using the ANOVA model showed very significant results and indicated changes in business processes in the corporation. The results of the analysis prove a very strong connection between the number of rides and total revenues. The Multiple R coefficient is 0.96326, which indicates a very strong correlation, with an interpretability coefficient of 0.89181 (Adjusted R Square for less than 30 frequencies). The coefficient of significance for the selected analysed parameters is 0.03673 (Significance F = 0.03673), that is, the coefficient of interpretation at the level of 0.05 is 0.03673 (P-value = 0.03673). A P-value greater than 0.05 proves that there is not a single parameter that is significant in this model, that is, the number of rides does not significantly affect the amount of income.

Table 6: Model ANOVA

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0,963262758							
R Square	0,927875141							
Adjusted R Square	0,891812712							
Standard Error	689,7863214							
Observations	4							
ANOVA								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	12242319,66	12242319,66	25,72969	0,036737242			
Residual	2	951610,3385	475805,1693					
Total	3	13193930						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95,0%</i>	<i>Upper 95,0%</i>
Intercept	2447,932875	1648,730843	1,484737721	0,2759053	-4645,983388	9541,849138	-4645,98339	9541,84914
Users	1,564656263	0,308461995	5,072444216	0,0367372	0,237451418	2,891861109	0,23745142	2,89186111

Source: own illustration

There is a limitation in the specific analysis because the number of frequencies is relatively small, but this result already indicates changes in the income generation model. The results of the analysis prove that the number of rides, in the ride-hailing model, is not significant enough to have a significant impact on the amount of income and realized profit or loss of the corporation. Therefore, future research should pay more attention to the structure and diversification of income. The results of the analysis are shown in table 6.

## 5. CONCLUSION

Uber has developed into the world's largest platform for the transportation of passengers by passenger car. He diversified his activity into the segment of different forms of door-to-door delivery and developed the availability of the application on all continents. After the drop in total revenues and the number of rides due to the Covid 19 pandemic, in 2021 the business stabilized and is gradually returning to the time before the pandemic. The research results can be divided into four basic conclusions:

- The corporation invested significantly in new activities, as well as in market expansion, which had an impact on the negative financial results. In addition, the global Covid 19 pandemic had a significant impact on the overall financial results and the interruption of the upward trend of income during the pandemic.
- The number of ride-hailing had the same trend as the revenue trend. The number of ride-hailing has been continuously growing until the onset of the pandemic, in different geographical parts of the world, and after that it drops sharply in the first and second quarter of 2020.
- The trend of the number of application users is almost identical to the trend of the number of ride-hailing.
- Revenues from ride-hailing followed the trend of total revenues, and revenues from Eats and Freight categories grew exponentially in the analyzed period.

In the context of the first research question, the research results showed a strong impact of the pandemic on the platform's overall operations, and especially on the platform's financial results. Total revenues fell sharply in 2020, only to recover in 2021 as global economies opened up. The financial result of the corporation is directly related to the number of rides, and the "closure" of farms directly harmed the financial results.

The corporation diversified its activities and developed different forms of door-to-door delivery, which mitigated losses. In the last analysed period, the income from food delivery was higher than the income from the classic passenger transport service. During the pandemic, operational losses as well as total losses were reduced as a result of the closure of the Asia Pacific market where the corporation was investing in market development. In the context of the second research question, a strong correlation between the number of rides and the total revenues of the corporation can be highlighted. Driving income is still the main income, but the income structure is changing. The results of the analysis using the ANOVA model proved the significant impact of the change in the income structure on the total income of the corporation. The results of the research proved a strong connection between the development of the pandemic and the number of rides or users of the application on a monthly basis. The number of rides as well as the number of users of the application grew until the end of 2019, and then fell sharply in the first and second quarters of 2020. The trend in the number of rides and app users was inversely proportional to the revenue trend in the door-to-door delivery of food and other necessities categories. In the context of the second research question, it can be concluded that the pandemic had a significant impact on the decline in the number of rides in the classic taxi corner segment as well as the decline in the number of application users, but at the same time, it had a significant impact on the growth of revenue in the delivery segments. In the context of the third research question, the income analysis indicates significant changes in the income structure. The change in structure can be divided into two categories. In the first category is the change in the income structure according to the types of transport. All significant revenues are in the Eats and Freight categories. The incomes of these two categories have been continuously growing and have been interpreted with an exponential curve. The growth of income was not stopped even by the Covid 19 pandemic, which proves a significant change in the corporation's business paradigm. Revenues from passenger transportation fell sharply in 2020, and rose again in 2021, but the growth was linear, unlike the revenue from Eats and Freight. In the second category is the change in the income structure according to geographical regions. Revenues from Latin America are continuously declining while revenues from EMEA and APAC are continuously growing. Analysis of the revenue structure by geographic region proves the strong impact of the Covid 19 pandemic on the corporation's operations. Revenues in the APAC region fell in 2019, while revenues in North America fell in 2020. After that, revenues grow in the following period in both geographic areas. The results of the research form the basis for new research on the results of the corporation in post-pandemic conditions. The income of the corporation as well as the number of users are continuously recovering after the opening of the farms. Future research will be based primarily on the analysis of total revenue and net profit/loss, the transformation of revenue by delivery services, and the trend of the corporation's revenue in Asia Pacific.

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## THE EFFECT OF STATE INTERVENTIONS ON THE TOURISM SECTOR OF THE REPUBLIC OF CROATIA

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### **ABSTRACT**

*As part of the tertiary sector, the tourism market represents a constantly growing global industry. Revenues from tourism represent a substantial tax inflow for the Republic of Croatia, considering that the share of the entire country's GDP generated from tourism activities ranges between 17 and 20% annually. The new pandemic caused by the coronavirus represents the biggest contemporary shock for world economies and economic trends. The tourism sector is the most affected by this pandemic because it is based on the movement of people, consumers' sentiments and the need for security and human contact in most activities. Compared with previous (either financial or public health) crises, the pandemic-caused crisis had the most significant impact on the economy due to globalisation and the openness of the global economy. Business entities that are part of the tertiary sector, especially those within the tourism industry, experienced a sudden drop in business volume due to the global pandemic caused by the spread of the coronavirus. The decline in business activities leads to a decrease in income and, thus, to lower state yields, which causes state intervention and borrowing. The paper analyses and compares the Croatian tourism sector with the competing Mediterranean countries of the EU and shows the influence of state interventions on tourism activities, which conditions state intervention and borrowing. The paper analyses and compares the Croatian tourism sector with the competing Mediterranean countries of the EU and shows the influence of state interventions on tourism activities.*

**Keywords:** *EU, state interventions, Republic of Croatia, tourism sector*

### **1. INTRODUCTION**

The Republic of Croatia has a long-standing tradition in tourism activities, the beginnings of which date back to the 19<sup>th</sup> century, and today it is one of the leading tourist countries within the European Union. In the last 20 years of the modern Croatian state, the tourism sector has represented an important strategic activity, with directly related service and hospitality activities representing a large share of the total gross domestic product. Maintaining the position of a leading tourist destination in terms of sustainability, quality, added value and safety is achieved through continuous investment in tourism, logistics and infrastructure systems and further development of market competencies. The concrete tourism supply is based on developing high-quality services of accommodation units at all levels, encouraging "greenfield" investments, reconstructing and managing state infrastructure and assets, and digitising the

tourism sector. The goal of developing the tourism supply is to strengthen the position of Croatian tourism and to promote the Republic of Croatia as an exclusive tourist destination through the synergy of natural predispositions and the diversification of the tourist product. Developing quality and investing in the position of the Croatian tourism trend creates a healthy basis for a long-term sustainable and resilient tourism sector. Continuous investment leads to an equal position of all business entities active in the observed market, stable employment and the integration of other sectors in tourism through the diversification of tourism supply and products. The tourism development strategy of the Republic of Croatia also includes the development of less developed tourist regions (certain islands, Dalmatian hinterland and Slavonia) to diversify products further and extend the tourist season to create a year-round tourism supply. Following this and the principles of the European Union, work is being done to develop an ecologically and carbon-neutral tourism sector, which further indirectly develops the diversification of products and the stability and development of directly related industries, which represent an essential part needed for the development of the quality of life and products as a prerequisite for an exclusive tourism supply that is a priority of the Croatian tourism strategy.

## **2. ECONOMIC ASPECTS OF CROATIAN TOURISM**

The role of tourism has been essential since it became significant for the world economy. At the beginning of the third millennium, tourism became the fastest-growing economic activity in the world, which continued to attract more and more attention (Žegleń et al., 2019). Croatian tourism has a specific and well-known image making it recognisable worldwide. The Republic of Croatia is positioned as a Central European Mediterranean country, and its tourism supply is based on the indented coast, coastal location, nature conservation, cultural heritage, sports tourism and many others. Regarding the trends, the "3S" strategic concept attracts more foreign tourism markets and causes demand stagnation. For this reason, the Republic of Croatia developed a strategy of individual quality of the supply, which bases its competitiveness on the differentiation of tertiary services. The potential strength of the competitiveness of Croatian tourism is based on the peculiarities and advantages that the Republic of Croatia has, looking at the tourism developed by neighbouring countries. The tourism supply of all Croatian tourist products and services is focused on developing a narrower range of products related to untouched nature, extremely favourable climate, sea, and culture, thus expanding the tourism supply related to the traditional form of tourism. It is necessary to emphasise the development of recreational and entertainment services along the sea coast, the development and care of the coast and beaches, the maintenance of the cleanliness of the sea and the significant and globally dominant nautical tourism. All these qualities should distinguish Croatian tourism from its Mediterranean competitors and profile it as a unique vacation spot for foreign tourists. The expansion of accommodation capacities has almost reached its limits; therefore, the current focus is on increasing their quality and exclusivity to improve the current tourism supply. The basic concept of Croatia's tourism supply, which separates it from its Mediterranean competitors, is based on the characteristics of a geographically small but culturally colourful country. Among other things, Croatian culture implies extreme hospitality and kindness of people, which creates security and comfort when discovering it. On the tourist demand side, in addition to the many services and products offered, emphasis should be placed on the positive qualities of a relaxing, healthy and active holiday in the natural surroundings of the Adriatic Sea, surrounded by a thousand islands. Affirming the market principle of value for money has a distinct meaning in improving the tourism supply and adapting it to more specific and demanding consumers. A higher quality market tourism supply can be achieved by developing it on a specific long-term basis because the development of the overall tourism supply results from the development of the entire economy and its environment.

The competitive strength of the tourism supply in the Republic of Croatia is a prerequisite without which there is no economic basis for development or integration into European globalisation trends. Due to global changes and an accelerated international economy, the business conditions of large, medium and small companies are also changing, and competition at the price and quality level is increasing. Market turbulences caused by globalisation primarily affect the immediate tourism supply providers. Tourist services and products offered at the local level are thus increasingly faced with global and excessive demand, which, in turn, shows a noticeable sensitivity to various disturbances in its own and receptive environments. Tourism supply providers in the Republic of Croatia must adapt to current and upcoming market processes and enter European tourism integrations. It means adapting their development and business tactics to new market requirements, from production volume, technical equipment, and business organisation to human capital. Constant improvement of quality, control of production standards, continuous education of employees and management, and promotion of foreign investments in the tourism supply - it is possible to raise the standard and gain competitiveness in the market. These processes can be realised with creative employers, creative investors, fresh capital inflow, and the rapid turnover of existing capital. Furthermore, the success of the tourism sector in the Republic of Croatia will depend significantly on the development of small and medium-sized enterprises. Small and medium-sized enterprises are essential in raising the quality of services and products, protecting customers and their experiences because they prefer them precisely because of the feeling of local belonging and intimacy with restaurateurs. They are crucial for the development of sustainable tourism, for the revitalisation of less developed areas and for retaining the population in passive areas. Small and medium-sized enterprises are more adaptable to market conditions and show enviable elasticity concerning seasonal demand. Due to the market of the tourism sector and the internationalisation that creates better competition, state intervention is needed. In other competitive tourist countries, macroeconomic (tourism) policy measures encourage the competitiveness and development of this sector. Vrtiprah and Svilokos (2005) point out that the best instruments were public finance instruments (state investments, grants and subsidies, exemptions from income tax and real estate, application of differentiated tax rates) and instruments of monetary credit policy (long-term loans with low-interest rates and full financial guarantees of the government for borrowing abroad). Such measures are also essential for Croatian tourism. Macroeconomic policy measures should: introduce a policy of differentiated fiscal incentives and subsidies that will reduce business expenses and create conditions for the formation of competitive prices; adjust VAT for business entities in the tourism industry; provide financial support based on market criteria and standard market risks. In addition to measures in the sphere of monetary and fiscal policy, it is necessary to encourage the development of the tourism sector with other measures, in particular: the introduction of an education system for all levels of management, the similar entry of foreign business entities into our market while ensuring the conditions for the creation of quality forms of partnership between domestic and foreign business entities on the vertical and horizontal level (proprietary investments, sharing of know-how, franchises and management contracts), by introducing and legally covering specific consumer protection mechanisms, etc. Europe is the most important macroeconomic region of global tourism. Demand, with its requirements and behaviour, usually dictates the quantities, quality and prices of individual goods and services. The manufacturer or supplier brings goods and services to the market in specific quantities, quality and price, where the demand, with their expressed interest in purchasing, shows how attractive and acceptable the offered goods or services are. That is, how well the sellers managed to arouse their interest and satisfy them. This is a very simplified approach to explaining demand as one of the market subjects, which as a rule, dominates market relations.

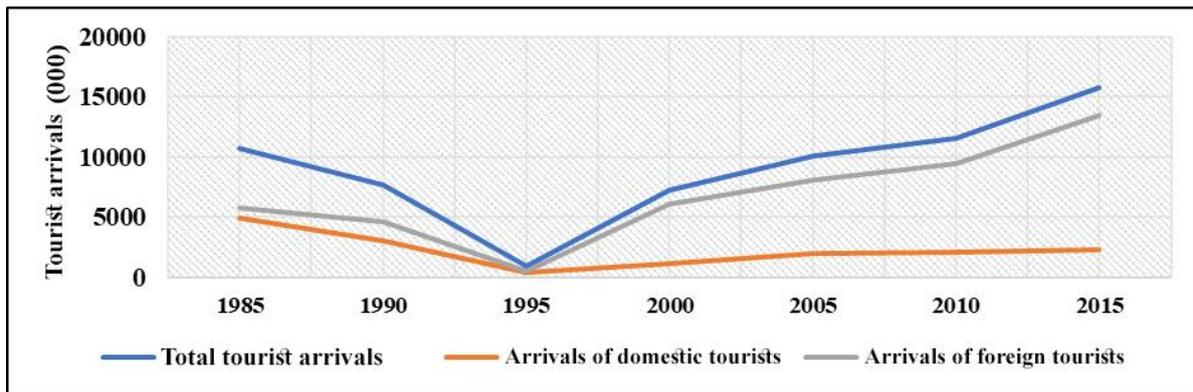


Chart 1: Ratio of foreign and domestic tourist arrivals from 1985 to 2015.

(Source: Authors' research and analysis according to the data from the Ministry of Tourism of the Republic of Croatia. Available at: <https://mint.gov.hr/pristupinformacijam/dokumenti-80/statistike/arhiva-12059/12059> (accessed on 12 December 2021))

Graph no. 1 shows tourist demand for Croatian tourism over a more extended period, i.e. the ratio of arrivals of domestic and foreign tourists to the Republic of Croatia from 1985 to 2015. Tourist demand represents all those who act as buyers in the tourist markets, those who, with their market preferences, determine the quantities, quality and prices of individual products and services in the target tourist market. Tourist demand, especially foreign demand, has gradually increased in the last 30 years, except for the pre-war and war periods, as well as in 2009 during the global economic crisis and, recently, in 2020, during the global pandemic. In 2019, 19.6 million tourist arrivals and 91.2 million overnight stays were realised in commercial accommodation facilities. Compared to 2018, there was an increase in tourist arrivals by 4.8% and an increase in overnight stays by 1.8%. Domestic tourists achieved 2.2 million arrivals and 7.1 million overnight stays, representing an increase in arrivals by 9.4% and an increase in overnight stays by 9.6% compared to 2018. Foreign tourists achieved 17.4 million arrivals and 84.1 million overnight stays, which is 4.3% more arrivals and 1.2% more overnight stays compared to 2018. The Republic of Croatia is continuously increasing its tourism demand. The constant growth of invisible exports in the last two decades confirms that tourism is an essential generator of the development of the Croatian economy. The Republic of Croatia bases its tourism demand on following the dynamic and competitive European market.

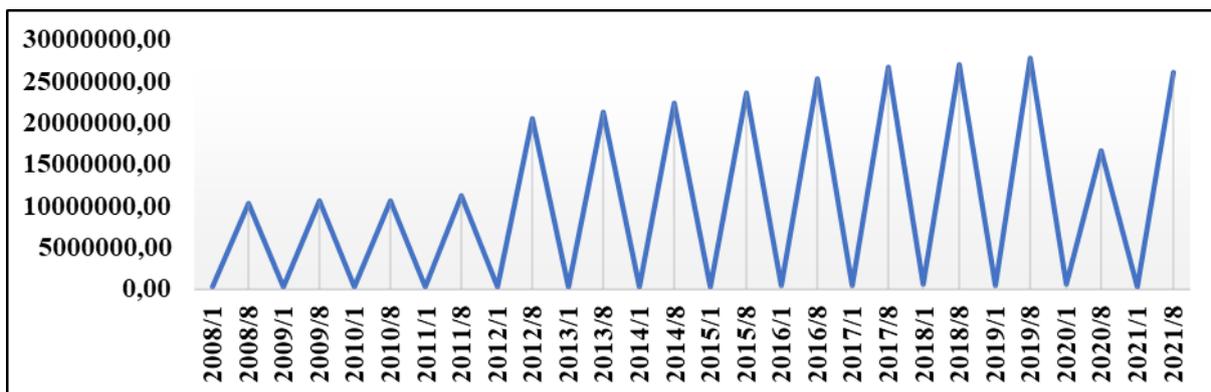


Chart 2: Foreign tourist demand from 1 January 2008 to 1 January 2022.

(Source: Authors' research and analysis according to EUROSTAT data. Available at: [https://ec.europa.eu/eurostat/databrowser/view/TOUR\\_OCC\\_NIM\\_custom\\_627607/bookmark/line?lang=en&bookmarkId=fb342f63-8ed4-4687-9303-ea68acce5197](https://ec.europa.eu/eurostat/databrowser/view/TOUR_OCC_NIM_custom_627607/bookmark/line?lang=en&bookmarkId=fb342f63-8ed4-4687-9303-ea68acce5197) (accessed on 15 January 2022))

Chart no. 2 shows the movements of foreign tourists who stayed overnight in the Republic of Croatia for more than four days and indicates a constant growth in tourist demand in the Republic of Croatia. What can be excluded is the slight stagnation in 2009, given the onset of the economic crisis, i.e. the collapse of the banking sector. The stagnation continued until 2011 when tourist demand in the Croatian market exploded. The considerable growth in tourist demand peaked in 2019 when over 23 million total overnight stays were achieved. In 2020, there was a global crisis caused by the coronavirus, when there was a drop in demand in the amount of 45.7%, which significantly impacted the total Croatian GDP, considering that tourism makes up between 18 and 22% of the total Croatian GDP.

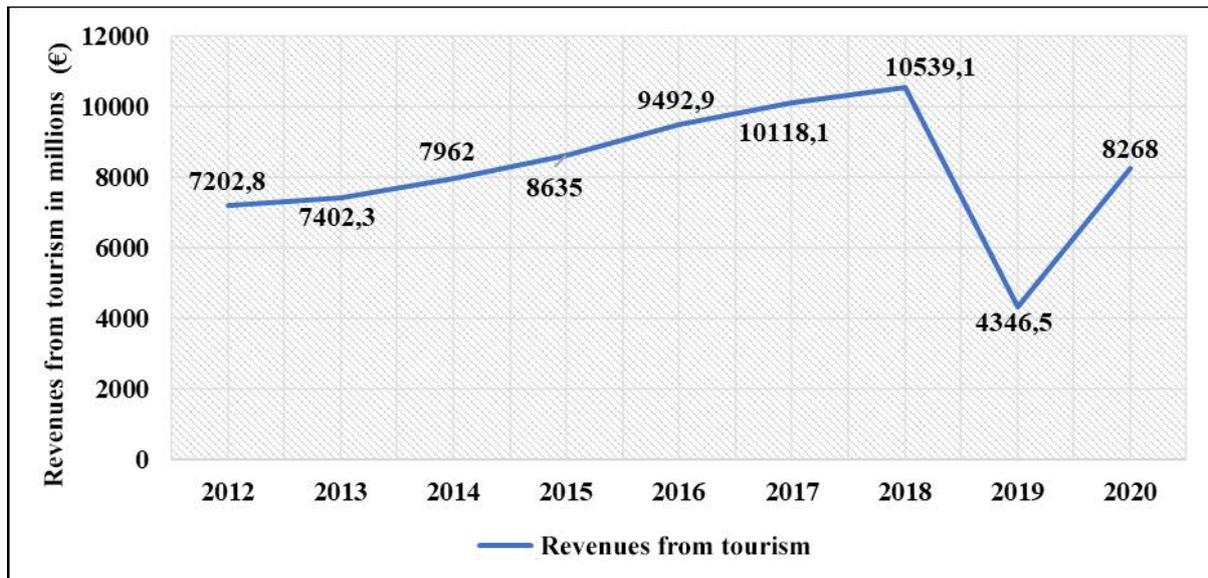
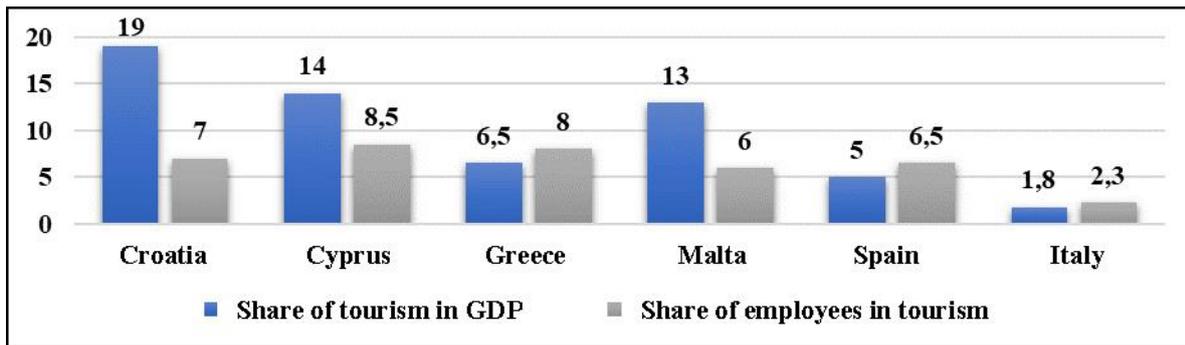


Chart 3: Trends in tourism revenues in the period 2012 - 2021, expressed in millions of euros (Source: Authors' research and analysis according to the data of the Croatian Tourist Board. Available at: <https://www.htz.hr/hr-HR> (accessed on 18 January 2022))

According to the given data in Chart No. 3, monetary inflows from tourism activities are visible. These financial resources cover 18-23% of the total gross national product, varying yearly. For example, the ratio of income to total GDP and the total percentage of employment in tourism for 2016 will be shown and compared with the main competitors in the EU. The Republic of Croatia has been continuously increasing its tourism demand for many years. The continuous growth of invisible exports at the national level confirms that tourism is a generator of the development of the Croatian economy. The demand trend for tourism products and services is based on seasonal demand in the summer months, which creates a sensitive market subject to market turbulence.

Chart following on the next page



*Chart 4: Ratio of tourism in total GDP and employment in tourism*

*(Source: Authors' research and analysis according to EUROSTAT data available at: [https://ec.europa.eu/eurostat/databrowser/view/TOUR\\_OCC\\_NIM\\_\\_custom\\_627607/bookmark/line?lang=en&bookmarkId=fb342f63-8ed4-4687-9303-ea68acce5197](https://ec.europa.eu/eurostat/databrowser/view/TOUR_OCC_NIM__custom_627607/bookmark/line?lang=en&bookmarkId=fb342f63-8ed4-4687-9303-ea68acce5197) (accessed: 28/01/2022))*

Chart no. 4 compares the tourism demand of the Republic of Croatia with competing countries in the Mediterranean area, and it is evident that the Republic of Croatia has the largest share of tourism activities in the total gross national product. This data additionally shows the exposure of the entire economy to market shocks. In the observed year, it is evident that the Republic of Croatia is ahead of all competing countries according to the given parameters. A high share of the gross domestic product represents the instability of the entire economy and the underdevelopment of the primary and secondary sectors. On the other hand, tourism activities employed 86,600 workers in 2016 (6.6% of total employees), which indicates that this sector is highly developed and implies employment mobility regardless of its seasonal nature. According to the natural predisposition model, local management units must invest in product diversification and focus on the year-round tourism supply to improve the tourism supply and strengthen the entire sector at the national level. In 2018, the total number of foreign tourists was 16.6 million, representing 92.8% of total arrivals, with 83.2 million overnight stays, with an average stay of five nights. The primary sending markets for the Republic of Croatia are Germany (16.7% of international tourists), Austria (8.2%) and Slovenia (8.2%). Some growth is also evident in distant foreign markets such as the United States, Canada and China. When talking about domestic demand, in 2018, the number of overnight stays by domestic tourists in all types of accommodation increased by 8.3% to 6.5 million overnight stays. Out of 90.0 million overnight stays by foreign and domestic tourists, only 7.2% of the total number of overnight stays is attributed to trips by domestic residents. Given the importance of promoting tourist trends, the Ministry of Tourism, in cooperation with the tourist community, the Chamber of Commerce and various tourist associations, constantly proposes strategies and policies related to the structuring of tourism. The budget for tourism in 2018 was HRK 230 million, representing 0.2% of the total state budget. The total budget of the Croatian Tourist Board from all sources amounts to HRK 323.6 million, and it comes from the tourist tax (47.8%), the state budget, membership fees and other sources. In comparison to 2017, this represents an increase of 20%. The state is continuously working on increases in fees for all tourist institutions, and these increasing expenditures should serve to improve and promote the Croatian tourist image and achieve the decentralisation of tourist marketing. The aim is to transfer operational control over product development, information and distribution of tourist products to local authorities. At the same time, regional committees will be responsible for strategic planning and development, research and marketing, and the National Tourist Board will focus on international marketing.

### **3. STATE ACTIVITIES DURING THE MARKET CRISIS CAUSED BY THE COVID-19 VIRUS**

The global crisis caused by the newly discovered coronavirus has engulfed the entire planet in an extremely short time period and caused a historically specific and unprecedented shock and global market relations, which fell into a large-scale crisis with an as-yet-unknown deadline. So far, no economic crisis (e.g. the Great Depression of 1929 - 1930, the financial crisis of 2008 - 2009) has occurred so quickly, with such a deep decline in economic activity and has not simultaneously affected the entire world economy. It is necessary to understand its character, how it affects the economy and the possible consequences of economic shocks to set criteria for reducing and solving the current crisis caused by the coronavirus and precisely determine the market situation before the crisis shock. In the case of the current COVID-19 crisis, the Republic of Croatia, in the form of National Civil Protection Headquarters of the Republic of Croatia suspended the functioning of the market because a decision was made to prohibit leaving the place of residence and permanent residence, which practically froze the markets for goods and services and the labour market, which is greatly influenced the functioning of the money and foreign exchange markets. The decision was justified by the public choice of prioritising the preservation of health. On the initiative of the ECB, the CNB (The Croatian National Bank) made a similar recommendation on dividend payments in the financial sector. However, up to this moment, it has limited its interventions to the foreign exchange market, aiming to maintain the exchange rate and the financial system's liquidity. The direct measures of the CNB that would stimulate the real economy, amortise losses and increase the financing of households, and small and medium-sized enterprises, have not yet been realised. In the first period of the corona crisis, the advantage of currency sovereignty was not officially perceived, but it was highlighted as a disadvantage, and the introduction of the euro was encouraged. On the contrary, many countries worldwide have already taken advantage of currency sovereignty or announced extensive packages based on it. Currently, the estimate for the Republic of Croatia is wide-ranged due to many unknown facts and parameters. Estimates by the OECD for the most developed countries of the world point to an even more significant drop in GDP due to the initial shock caused by the economic lockdown. According to their assessment, developed countries will experience an initial more significant drop in GDP than developing countries, ranging between 20 and 30% for the seven leading economies. For each month of sudden economic shutdown, around 2% of annual GDP growth will be lost. Rough estimates for the Republic of Croatia confirm a similar scenario. The depth and duration of this crisis will initially depend on the public health response and success. In response to the spread of infection and to maintain public health, most countries reacted with lockdowns and restrictions imposed on economic and human freedoms, the likes of which Europe does not remember in its history. The consequence of such restrictions is a sharp drop in economic activity and the economic crisis that followed. Negative trends are the result of direct bans by the state, but also a general feeling of fear as an external factor that affects the behaviour of economic entities, as well as interdependence with the world economy in general and other countries, which were also affected by the pandemic. For the above, the following text of the paper will analyse the impact of the COVID-19 pandemic on selected member states of the European Union with an emphasis on the Mediterranean countries because they are mutually competitive in the field of tourism, namely: Croatia, Malta, Spain, Cyprus, Italy and Greece.

*Table following on the next page*

PERIOD (QUARTERS)	2019-Q3	2019-Q4	2020-Q1	2020-Q2	2020-Q3	2020-Q4	2021-Q1	2021-Q2	2021-Q3
GREECE	49,870.4	45,857.4	40,590.6	37,885.0	44,490.9	42,360.0	39,349.2	44,555.1	51,754.2
SPAIN	305,611.0	324,228.0	289,305.0	251,187.0	282,149.0	299,307.0	279,421.0	299,901.0	297,069.0
CROATIA	15,631.8	13,738.2	12,451.2	11,655.9	13,462.5	12,623.1	12,334.9	14,039.4	16,513.2
ITALY	444,854.6	476,044.2	402,460.0	373,587.0	424,584.1	452,946.2	409,786.8	436,575.5	443,330.5
CYPRUS	5,968.9	5,803.2	5,469.2	4,995.1	5,612.3	5,471.7	5,370.1	5,776.1	6,030.7
MALTA	3,680.0	3,600.2	3,375.1	3,034.5	3,311.5	3,362.3	3,383.5	3,527.1	3,705.9

*Table 1: Quarterly GDP change rate of selected European Union countries compared to the previous period (in billions of €)*

*(Source: Authors' research and analysis according to EUROSTAT data, available at: [https://ec.europa.eu/eurostat/databrowser/view/TOUR\\_OCC\\_NIM\\_\\_custom\\_627607/bookmark/table?lang=en&bookmarkId=fb342f63-8ed4-4687-9303-ea68acce5197](https://ec.europa.eu/eurostat/databrowser/view/TOUR_OCC_NIM__custom_627607/bookmark/table?lang=en&bookmarkId=fb342f63-8ed4-4687-9303-ea68acce5197) (accessed 02/02/2022))*

Data from Table 1 show the quarterly GDP change rate compared to the previous period. In 2019, some countries had a negative transition between quarters. However, it is clear that this was a period of economic growth unencumbered by the pandemic and that other market turbulences were to be blamed. A significant slowdown is visible in the first quarter of 2020 compared to the trend caused by the infection spread and the gradual closure in the second half of the year and towards the end of the quarter. The second quarter of 2020 represents one of the worst macroeconomic developments, marked almost entirely by closures and restrictive measures to combat the pandemic. Thus, most countries recorded a double-digit or almost double-digit decline in GDP compared to the previous period. After that, in the third quarter, there was a significant acceleration compared to the second quarter, which is logical and predictable because the significant drop in activity was due to the state's mechanical restrictions, which were milder in the third quarter. The rest of the period is generally characterised by recovery. However, growth was still unstable, and countries, depending on the epidemiological situation and other factors, had very variable GDP growth data. Parallel to the substantial GDP fall in most observed countries, there was also a fall in public revenues. The fiscal authorities reacted to the decline in activity in the form of fiscal stimulation and support to the economy.

STATES	2018	in 2019	in 2020
GREECE	186.4	180.7	206.3
SPAIN	97.5	95.5	120.0
CROATIA	73.3	71.1	87.3
ITALY	134.4	134.3	155.6
CYPRUS	98.4	91.1	115.3
MALTA	43.6	40.7	53.4

*Table 2: presents the public debt increase in the observed countries from 2018 to 2020. (Source: Authors' research and analysis according to EUROSTAT data, available at: [https://ec.europa.eu/eurostat/databrowser/view/TOUR\\_OCC\\_NIM\\_\\_custom\\_627607/bookmark/table?lang=en&bookmarkId=fb342f63-8ed4-4687-9303-ea68acce5197](https://ec.europa.eu/eurostat/databrowser/view/TOUR_OCC_NIM__custom_627607/bookmark/table?lang=en&bookmarkId=fb342f63-8ed4-4687-9303-ea68acce5197) (accessed 02/02/2022))*

It is visible that the share of public debt in the total GDP of the observed countries increased by an average of 20%. This shift can be attributed to government intervention at the level of monetary policy. The observed countries stepped up with monetary policy measures in the form of new borrowings to help the economies during the crisis.

According to CNB data, public debt at the end of 2020 amounted to HRK 329.7 billion, or 88.7% of GDP. At the same time, its share in GDP increased by 15.9 percentage points compared to the previous year. This negative movement of the public debt, after a five-year downward trajectory, is a consequence of the decline in economic activity caused by the coronavirus pandemic and the numerous and generous fiscal policy measures implemented by the Government of the Republic of Croatia to provide support to the entire economy and citizens. Business changes occurred within the sector through restructuring and adaptation to new market conditions. State aid to the hotel and restaurant industry was the most critical measure in achieving adequate liquidity and normalising cash flow. Another important category was advertising, emphasising epidemiological measures and the safety of facilities for guests. The third category refers to operational business, where restaurateurs try to adapt business operations to the current situation. Thus, they strive to introduce new ways of checking in to accommodation - without human contact, to adapt cleaning and maintenance to the epidemiological situation and globally, to minimise negative impacts on regular business processes in business facilities. According to the Official Journal of the European Union (2020), measures to support the tourism sector most often included tax and other sector relief, increasing domestic consumption through tax credits or vouchers and generally subsidising fixed costs, recapitalisation, other transfers and sector financing. It should be mentioned that the European Union temporarily allowed state aid to the tourism sector through loans, public tenders, employment subsidies and the like up to a certain level per company, on average of 800,000 euros to support the sector. Substantial aid is also allowed to large businesses such as airlines and other large carriers to help the tourism industry. Recapitalisation, other transfers and financing of the sector It should be mentioned that the European Union temporarily allowed state aid to the tourism sector in the form of loans, public tenders, employment subsidies and the like up to a certain level per company, usually 800,000 euros, to support the sector. Substantial aid is also allowed to large businesses such as airlines and other large carriers to help the tourism industry. The Croatian HBOR (Croatian Bank for Reconstruction and Development) offered 600 million loans to the tourism sector with interest financed by the Ministry of Tourism for the first three years, while the loan term is a maximum of five, with an amount of up to HRK 1.25 million and with the possibility of state guarantees to enable the participation of small and medium-sized enterprises for the financing of operating costs. The HBOR also included the tourism sector in the already supported export sector that can obtain a guaranteed loan from commercial banks for large companies" (Eurofound, 2020). In addition to financing and lending, countries supported the tourism sector by reducing levies, i.e. increasing demand and consumption through incentive measures.

#### **4. THE FUTURE OF THE CROATIAN TOURISM SECTOR**

The best way the Republic of Croatia, as a tourism-oriented country, should direct its tourism sector is by achieving the synergy of public policies. Firstly, the Republic of Croatia must focus on a green and sustainable tourism policy. In this regard, it is necessary to implement climate neutrality policies. During a certain period, developing an energy infrastructure based on renewable energy sources, processes of decarbonising residential buildings, and a circular economy is vital. By developing the infrastructure above, the Republic of Croatia would significantly contribute to developing a digital and carbon-neutral Europe. In terms of economic policies, to improve the tourism supply, Croatia must work on the productivity of the primary and secondary sectors. The reason for this is to enable the competitiveness of the entire national economy because a market with good foundations gives the best results in other sectors. The development of the economy should be approached from the very foundations, i.e. the improvement of the public administration and the judiciary work, which represent fertile ground for the development of any economic branch.

Furthermore, there is a need for balanced regional development in the territory of the Republic of Croatia. Balanced regional development, implementation of demographic recovery policies and work on social differences are indispensable for sustainable development. The best strategy for developing the less developed regions is incentive measures for unused land and real estate in less developed regions, which encounter economic barriers to development, and we are talking mainly about the island and hilly areas. With the balanced development of cities and regions, resistance to crises should be strengthened. The goal is to regain stability and security to ensure a better quality of life. Among other things, this would strengthen the national economy and improve health systems, social systems and generally the work and life of people. All the abovementioned changes would directly affect the tourism demand in the Republic of Croatia and create better preconditions for its improvement and increase.

## **5. CONCLUSION**

The economic crisis of 2020, or the so-called "corona crisis", represents the most prominent economic shock since the Great Depression. The cause of the crisis is the pandemic caused by the newly discovered strain of coronavirus. During the first quarter of 2020, almost all countries entered a deep recession, leading to the predictions of economic depression. The economic decline is worse than during the great recession of 2009. The reason for the crisis is the most considerable global restriction on physical movement ever recorded in human history; at the beginning of the pandemic, more than a third of the world's population was placed in absolute quarantine. The restriction of the physical movement led to a significant decline in national economies, increased state indebtedness and the need for state interventionism. Of all the sectors, tourism is the most affected, given its dynamism and the need for global consumer migration. To maintain and save the tourism sector, states (including the Republic of Croatia) had to take measures to support and maintain the sector during the crisis period. The efficiency of the state intervention proved successful, considering the political and economic contradictions. Despite the restriction of the international movement, the states tried to support the tourism branch in every possible way. Most of it was done through various state subsidies, maintaining employment and supporting the solvency and liquidity of businesses that found themselves in a challenging business situation. Governments have also tried in every possible way to facilitate business flow through monetary instruments. The Republic of Croatia, through the Croatian National Bank, has increased the money issuance for commercial banks for more accessible and more favourable lending to business entities. Outside the scope of the adopted measures, the indirect state aid was based on tax relief to stimulate aggregate demand in the tourism sector. Although the end is in sight, given the constant investment in vaccine research, the further course of the current pandemic is still questionable. Presently governments are increasingly lifting restrictions on movement and international travel, but the emergence of new strains of the virus may lead to new restrictions. These should direct thinking in developing tourism as an activity. It is necessary to adapt to current situations and constantly work to make tourism greener, more resilient and more sustainable. An extended recovery period awaits the tourism sector during the post-pandemic period compared to the period before the pandemic's start. A high level of travel uncertainty, a decrease in profitability, reduced liquidity, and the reduced general survival of business entities can be expected.

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# THE INFLUENCE OF INTERNATIONALIZATION AND PROJECTS BASED ON THE TRIPLE HELIX CONCEPT ON THE DEVELOPMENT OF THE COMPETITIVENESS OF HIGHER EDUCATION INSTITUTIONS

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## ABSTRACT

*In accordance with current global trends, project internationalization and integration of higher education institutions, with the aim of generating common ideas based on synergy and commercialization of the same, represent one of the key elements for achieving competitive advantage. With internationalization, a higher education institution develops a specific direction in development quality policy, which is then implemented in various policy arenas. Higher education institutions are facing increasing challenges to meet the needs of users of their services. The current position and role of higher education institutions, as well as the modalities of their activities, are gradually changing. New solutions are being sought, more focused on the entrepreneurial component as a key factor in the sustainable development of higher education institutions. Also, the competitiveness of higher education institutions increasingly depends on their cooperation with the economy and the public sector, with projects that represent strong interaction of three key stakeholders (higher education institutions, business and public sector), in order to maximize synergy based on triple helix concept. Following the global trends, the Faculty of Medicine of the University of Osijek (MEFOS) has recognized these paradigm changes in higher education, and by finding strategic partners is launching an increasing number of projects to generate new ideas and develop commercial activities to increase its competitiveness. This paper presents cases of many years of development of such projects and methodologically describes the concept of their development in recent years. The results indicate a significant increase of project activities in the past period, resulting primarily from internationalization and integration projects and connecting faculties with the economy and the public sector, with the aim of raising growth and development of the region in which it operates. The results presented in this paper can serve as an example of good practice for the development of other higher education institutions in the Republic of Croatia and beyond.*

**Keywords:** *competitiveness, higher education, internationalization, project management, strategic development, triple helix*

## 1. INTRODUCTION

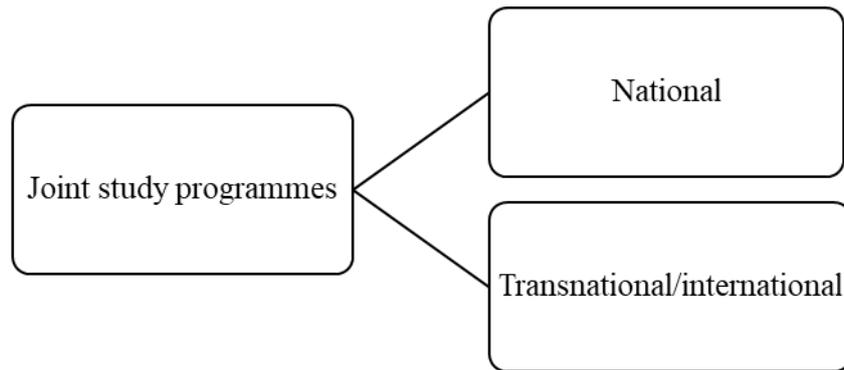
Changes in the means of knowledge transfer that higher education institutions face on a daily basis, accompanied by the increasing competitiveness in the intellectual services market, have created a need that makes higher education institutions exceed the boundaries of their own predefined action.

Internationalization is one of the most important steps that a higher education institution can take to change its course of action. Internationalization projects bring a new value in terms of achieving growth, initiating development and leading to faster development and better positioning in the intellectual services market. According to Novinc et al. (2019), internationalization projects aimed at modernising and increasing the competitiveness of higher institutions are expected to ensure the development of innovative methods, implementation of ICT tools in education, integration of international theoretical and practical knowledge and gaining new experiences. The triple helix model is the basis for understanding the cooperation among higher education institutions, the economy and local self-government. Their mutual cooperation leads to innovation, opportunity recognition and growth of both the local community and society in general. In the triple helix model, every subject plays an equally strong role in finding common interests and promoting collaboration. According to Barilović et al. (2022), the greatest benefit is that the hands-on implementation of the triple helix principle allows building and strengthening the network of cooperation among key components. At the same time, partners are taught to rely on each other in response to actual regional development needs. The aim of this paper is to present the influence of internationalization and projects based on the triple helix concept on the development of the competitiveness of higher education institutions using the Faculty of Medicine Osijek as an example. In the research part, using case study methodology, this paper presents select examples of successful projects based on the triple helix model in the context of developing own capacities, increasing competitiveness, advancing scientific research and improving the general welfare of society.

## **2. THEORETICAL OVERVIEW**

Over the last 20 years, the process of globalization of higher education has intensified significantly. This is most noticeable in Europe, considering the introduction of the Bologna Process and the European Qualifications Framework. In a system where the exchange of knowledge and experience knows no bounds and information is easily accessible, many opportunities arise, competition among universities is encouraged and higher education institutions increasingly adapt to new circumstances. Debeljak et al. (2021) argue that faculties that used to be focused on their teaching skills or basic scientific research can now focus their engagement on professional development in a certain area of intellectual property development, which can result in commercial application. Higher education is no longer seen as a system dedicated to education and research only, but its business policy now also includes commercialization of intellectual property. Thanks to European higher education institutions accepting the process of internationalization, the overall quality of education has increased and the development of scientific research has been accelerated. Therefore, it can be said that internationalization of Croatian higher education institutions is the strategic objective of their development. One of the objectives of internationalization is increasing the number of foreign students enrolled in integrated studies in the Republic of Croatia, which is why the Ministry of Science and Education develops mechanisms that will contribute to increasing the number of study programmes delivered in foreign languages. As shown in Figure 1 below, one way of developing internationalization is through joint degree programmes, which represent a key aspect of cross-border cooperation in higher education. Joint degree programmes are higher education study programmes (e.g. for the purpose of studies or research) which are designed and delivered together with partners.

*Figure following on the next page*



*Figure 1: Classification of joint study programmes*  
(Source: made according to the European Commission, <https://erasmus-plus.ec.europa.eu/hr/programme-guide/part-d/glossary-higher-education>)

It must be noted that the European Social Fund finances 30 projects, under which higher education institutions develop their study programmes, courses and modules in foreign languages as well as short international programmes, such as winter or summer schools. The triple helix model was first mentioned by Henry Etzkowitz and Loet Leydesdorff in their article titled “The Triple Helix, University-Industry-Government Relations: A Laboratory for Knowledge-Based Economic Development”, published in 1995. In this article, the authors pointed out that the triple helix is a model representing the cooperation of three social actors – the government, the business sector and the university. Their cooperation should result in new forms of institutions and projects which do not belong to any of the actors, but rather stem from their interaction and collaboration. According to Etzkowitz (2003), cooperation between these three sectors can contribute to improving each one of them and consequently advance society in general. Each actor has and performs some kind of its core function and their interaction will lead to synergy that will help and benefit each of them. Such a concept is considered to be integrative, since it advocates outgrowing earlier bilateral relationships between individual actors and at the same time promotes a scientific policy that involves trilateral cooperation, evident from the metaphor the model was named after (Etzkowitz, 2008). The model also includes a regional component, meaning that the intention is to make a local university, local business sector and local government as connected as possible. Since these local actors already know each other well, they must be aware of their own and each other’s strengths and weaknesses. This is considered to be a good prerequisite for ensuring successful cooperation that would ultimately lead to the economic growth of the local area concerned. According to Debeljak et al. (2021), with every improvement of the quality of its components, the University of Osijek improves its own status and recognizability, while the City of Osijek and Osijek-Baranja County directly benefit from completed projects due to the improved quality of life in the community. On the other hand, partners and investors are interested in profit, which makes them potential associates for fulfilling all the prerequisites of the triple helix model.

### **3. METHODOLOGY AND RESULTS OF OBSERVED PROJECTS**

#### **3.1. Methodology**

For the purpose of preparing this paper, the case study method was applied, which is related to the observation method. The case study method is based on a process of studying a particular case in a certain scientific or professional field (e.g. economics, medicine, etc.). The observed period covered the period from 2017 to 2022. During this period, many projects were launched and carried out at the Faculty of Medicine Osijek. According to the Database of Project Activities in Science and Higher Education in Croatia (POIROT), the Faculty of Medicine Osijek carried out 175 projects.

For the purpose of this paper, the analysis covers the five most significant projects of the Faculty of Medicine Osijek based on the triple helix concept. The list of the most significant projects of the Faculty of Medicine Osijek can be found in Table 1 below.

Project name	Project duration	Total project value
Scientific Center of Excellence for Personalized Health Care	5 October 2017 – 5 October 2022	HRK 37,042,770.02
Development and Implementation of the Integrated Study Programme of Medicine in German	1 October 2018 – 1 January 2020	HRK 1,779,253.18
Development and Implementation of the Interdisciplinary Graduate Study Programme “Biotechnology” in English	12 October 2018 – 12 October 2020	HRK 1,776,323.15
Improving the Existing Integrated Undergraduate and Graduate Study Programme of Medicine	22 March 2019 – 22 March 2022	HRK 3,993,294.55
Strengthening Implementation of the Justified and Optimized Use of Ionizing Radiation in Medicine	1 January 2022 – 31 December 2025	HRK 8,701,646.63

*Table 1: List of the most significant projects by commencement date  
 (Source: adjusted according to the Database of Project Activities in Science and Higher Education in Croatia (POIROT))*

*[https://pdb.irb.hr:8443/search?q=Medicinski+fakultet%2C+Osijek+%28219%29&qId=219&type=institution&sort=start\\_date\\_desc&limit=10&page=1](https://pdb.irb.hr:8443/search?q=Medicinski+fakultet%2C+Osijek+%28219%29&qId=219&type=institution&sort=start_date_desc&limit=10&page=1)*

### **3.2. Results of the latest most significant projects of the Faculty of Medicine Osijek**

This section presents the results of the five most significant projects carried out by the Faculty of Medicine in Osijek in the most recent period. The first project is titled “Scientific Center of Excellence for Personalized Health Care”. The project concerns an interdisciplinary center of excellence for biotechnical and biomedical sciences. It is conceived as an efficient way of transferring knowledge and competencies in biotechnical sciences to basic and applied biomedical research involving complementary research groups. One example of synergistic activities between the scientific units of this CoE is the possibility of analysing glycan-based biomarkers when evaluating the effects of functional food among healthy and ill persons. Since this is an innovative and original approach to food, this center’s work will increase the international scientific and economic competitiveness of our region and consequently of Croatia in general. The project is co-funded by the European Commission through the Cohesion Fund. The type of funding is competitive project-based funding. This project is specific for the number of cooperating institutions and components under the Josip Juraj Strossmayer University as the project holder. Scientific Center of Excellence for Personalized Health Care is the longest of the aforementioned projects, lasting from 5 October 2017 to 5 October 2022. The second notable project is “Development and Implementation of the Integrated Study Programme of Medicine in German”, which also involved the Faculty of Humanities and Social Sciences in Osijek as the project partner. The competent body for the project was the Ministry of Science and Education, Agency for Vocational Education and Training and Adult Education. Just like the previous project, this one was also funded by the European Social Fund under the Operational Programme Efficient Human Resources 2014-2020. The project “Development and Implementation of the Integrated Study Programme of Medicine in German” was valued at HRK 1,779,253.18 (100% funded by the European Social Fund).

The purpose of the project was to implement the Integrated Study Programme of Medicine in German by developing the study programme and improving the competencies of the teaching and non-teaching staff in Osijek-Baranja County (Development and Implementation of the Integrated Study Programme of Medicine in German, 2022). The results of the project were that the syllabus of the new Integrated Undergraduate and Graduate Study Programme of Medicine in German was developed and that the activities for improving the linguistic competence of teaching and non-teaching staff were completed. The implementation of the study programme started in the 2021/2022 academic year. AMEOS Spitalgesellschaft mbH was chosen as the strategic partner for implementing the programme. In the first year, 52 students from Germany, Austria and Switzerland enrolled in the study programme in Osijek. The third project was called "Development and Implementation of the Interdisciplinary Graduate Study Programme 'Biotechnology' in English". It must be noted that this project complied with numerous strategy documents at the local, national and European level. The intention of the project was to develop the curriculum of a new, unique graduate study programme, mostly because at the time, there were no biotechnology studies in the Republic of Croatia delivered entirely in English. Therefore, the competencies of teachers, associates and administrative staff were developed through activities aimed at increasing their proficiency in English. The implementation of this joint study programme and networking with foreign institutions, which was also planned under this project, were expected to increase the number of incoming foreign teachers and students (Croatian Research Information System). The project was also intended to increase the international visibility and competitiveness of the Josip Juraj Strossmayer University of Osijek. The Faculty of Food Technology was the project holder, with the Faculty of Medicine Osijek as the project partner. This project was co-funded by the European Social Fund under the Operational Programme Efficient Human Resources 2014-2020. The project grant amounted to HRK 1,776,323.15 and the project was to be carried out within 24 months (from 2 October 2018 to 12 October 2020). The project was completed successfully and the implementation of the study programme is expected in the 2022/2023 academic year. The fourth project was named "Improving the Existing Integrated Undergraduate and Graduate Study Programme of Medicine". This project was specific because it involved cooperation of all the faculties/schools of medicine in Croatia, i.e. the Faculty of Medicine Osijek, School of Medicine in Zagreb, School of Medicine in Split and the Faculty of Medicine in Rijeka. The project was funded under the Operational Programme Efficient Human Resources 2014 -2020. The higher education system in the Republic of Croatia often faces the issue of being too rigid to adapt to the needs of the current and future labour market, having inadequate expert knowledge, competencies and consequently qualifications relative to the professions, competencies and qualifications demanded by employees, and showing disparities in the quality of similar or identical study programmes. Considering the issues related to the state of the system, uniform standards for the professions, qualifications and learning outcomes of the Integrated Undergraduate and Graduate Study Programme of Medicine needed to be defined, taking into account the necessary flexibility and needs of the current and future labour market. The objectives of the project were to improve the existing Integrated Undergraduate and Graduate Study Programme of Medicine under the Croatian Qualifications Framework by assuring quality and improving staff competencies, thus contributing to the fulfilment of the interlinked goals of the Europe 2020 strategy. Considering that increasing the level of education increases employability, this project was to contribute to achieving the following objectives: 1) 75% of the population aged 20-64 should be employed and 2) at least 40% of young people should complete tertiary education. The project was to contribute to the priorities related to smart and inclusive growth by increasing teacher competencies and student employability and by developing new relevant skills.

The project complied with the Standards and Guidelines for Quality Assurance in the European Higher Education Area, student-centered learning, teaching and evaluation standards and standards for the teaching staff. Total project value amounted to HRK 3,993,294.55 and the project was carried out from 22 March 2019 to 22 March 2022. The fifth project is titled "Strengthening Implementation of the Justified and Optimized Use of Ionizing Radiation in Medicine". The project has been conceived to assist member states in the European Region to enhance radiation protection and safety in medical uses of ionizing radiation through improved implementation of the IAEA General Safety Requirements (GSR) on medical uses of ionizing radiation. It is focused on strengthening national capacities to effectively implement related regulatory requirements. The main goals of the project are based on an analysis of data in the Radiation Safety Information Management System (RASIMS) 2.0 that identified gaps related to the implementation of said requirements. The key areas to be addressed include: (1) justification of medical exposures; (2) optimization of radiation protection of patients, including the establishment and use of diagnostic reference levels; (3) special attention to the radiation protection of paediatric, pregnant and breastfeeding patients and (4) prevention of accidental medical exposures. The project will endeavour to strengthen national mechanisms to achieve improvements on a broad national level. Regional cooperation will provide a platform for developing common approaches and sharing experience. This is one of the latest projects of the Faculty of Medicine Osijek and its implementation started in early 2022. The project will be completed in late 2025. The project is funded by the IAEA – International Atomic Energy Agency. Information about the implementation and results of the project will be available on <https://pcmf.iaea.org/Home.aspx>. Total project value is HRK 8,701,646.63.

#### **4. CONCLUSION**

Owing to the objectives of the higher education system reform and restructuring in the Republic of Croatia, the Croatian economy, which is considered a modern economy, is based on the implementation of new knowledge, technologies and projects, which makes it more competitive. Accordingly, it can be concluded that the Faculty of Medicine Osijek truly is a competitive higher education institution, especially considering the numerous collaborative projects launched between 2017 and 2022. The Faculty of Medicine Osijek has recognized the importance and the role of internationalization of the higher education system as a strength and function of the triple helix model. As exemplified by the projects of the Faculty of Medicine Osijek and its partners, the triple helix has proven to be a successful model when it comes to cooperation among higher education institutions, the business sector and the local community. The projects described clearly show that the Faculty of Medicine Osijek has received enormous support from the Josip Juraj Strossmayer University of Osijek, local community, City of Osijek, Osijek-Baranja County and the Republic of Croatia to put its ideas into action, particularly in the form of grants provided under European funds. Moreover, the Faculty of Medicine Osijek has been choosing its project partners carefully to make sure that the final results guarantee longevity, top quality of services and excellence in knowledge transfer. Future research of this topic should analyze the impact and results of project objectives, activities and progress. It is also necessary to monitor and analyze the satisfaction of all stakeholders involved in the triple helix model, their progress and satisfaction with current results and future expectations. For the purpose of this paper, the five most significant projects carried out in the period from 2017 to 2022 were observed. Further research should observe all projects carried out during that period and analyze their impact on the internationalization of the Faculty of Medicine Osijek.

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## EUROPEAN SECURITY ARCHITECTURE IN THE CONTEXT OF THE US NATIONAL STRATEGY (2022)

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### **ABSTRACT**

*US National Security Strategy adopted in October 2022. highlights the complex security challenges in Eurasia that pose a threat to US global dominance. What does the new US national security strategy mean for the EU? Namely, until recently the concept of European strategic autonomy, which affirmed not only the military, but also the specific economic interests of the EU, was marginalized by the Ukrainian crisis. Thus, in the context of the comprehensive destabilization of Europe, the security architecture of the continent is shaped by the instruments of the American security strategy, which is not always compatible with the interests of the EU. Namely, the US National Security Strategy significantly determine the geopolitical possibilities of the European Union, which is facing the deepest crisis since the Second World War.*

**Keywords:** *U.S. National Security Strategy, Europe strategic autonomy, The New German Question security challenges, geopolitics*

### **1. INTRODUCTION**

Although the administration of US President Joe Biden published the document *Interim National Security Strategic Guidelines* (White House, 2021) in March 2021, the complete *US National Security Strategy* (White House, 2022) was adopted only in October 2022. In the context of intense geopolitical competition between the US, Russia and China, the new *National Security Strategy* highlights the complex security challenges in Eurasia that pose a threat to US global dominance. The strategy is based on the concept of the binary nature of the international order and the newly American political axis: democracy vs autocracy - which implies the threat of revisionist authoritarian regimes. Therefore, the Cold War discourse is renewed. It highlighted the geopolitical importance of Eurasia, whose non-recognition of American dominance is perceived as a danger to US national security. Despite Russia's invasion of Ukraine, China remains a priority for the US as the only competitor intent on reshaping the US-led, rules-based international unipolar order. Making a particular distinction between China as a "systemic", "global" challenge and Russia as an "immediate" albeit more localized, threat (Biscop, 2022), the strategy emphasizes the need to contain China, which is becoming a serious challenger to American military and technological supremacy. As well as a break with the decades-long American foreign policy based on the premise that China's global economic integration will disable its geopolitical ambitions, especially the possibility of becoming a potential military rival. Of course, the US *decoupling* (Weaver, J., 2022) from China requires alliances and partnerships, which is why the US has a strong focus on the EU. Namely, the increasing American focus on China and the Indo-Pacific forces Europe to take responsibility for its own security and defence of the continent, especially now in the context of a significant deterioration in European security. Therefore, significantly higher investments in military capacities and defence are expected in the coming period<sup>1</sup>

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<sup>1</sup> According to NATO's New Force Model (NFM), which the allies agreed at a summit in Madrid in June 2022, the 300 000 troops on high alert and combat-ready should be European troops (Biscop, 2022)

What does the new US national security strategy mean for the EU? Namely, until recently the concept of *European strategic autonomy*, which affirmed not only the military, but also the specific economic interests of the EU, was marginalized by the Ukrainian crisis. Thus, in the context of the comprehensive destabilization of Europe, the security architecture of the continent is shaped by the instruments of the American security strategy, which is not always compatible with the interests of the EU. Its outlines - the introduction of anti-Russian sanctions or "total economic and financial war against Russia" (Bruno Le Maire, 2022)<sup>2</sup> the increase in the defence budget of the European Union members country and the introduction of the war economy (Sanna Marin, 2022), significantly determine the geopolitical possibilities of the European Union, which is facing the deepest crisis since the Second World War.

## **2. SECURITY ARCHITECTURE OF EUROPE: CHALLENGES IN THE 21 ST CENTURY**

Since the beginning of the 21st century, there have been a series of security challenges: the economic crisis of 2008, migration waves, numerous terrorist attacks, BREXIT, the COVID-19 pandemic and the biggest - the Russian invasion of Ukraine. They completely destabilized the European security strategy, created in the context of the optimistic atmosphere of the nineties. Namely, after the Cold War, the European security strategy was based on a model built within the EU, but according to the legal-political agreements of multilateral institutions (NATO / OSCE / COUNCIL OF EUROPE), which regulated relations with Russia and the new states emerging from the Soviet Union. The vision of a complete and prosperous Euro-Atlantic community as an integrated security order with common values, especially the concept of an undivided Europe, faded under the pressure of the opposing positions of the US/EU and Russia. *The Common Foreign and Security Policy (CFSP)* is one of the most important policies of the EU. Democracy, the market economy, the ideology of human rights, along with diplomacy, are part of the successful soft power of the European Union with which it has tried to overcome the aforementioned security challenges. Although during the last two decades, NATO and the EU coexisted in numerous crisis management operations in such a way that NATO took on combat tasks of high and medium intensity, while the EU was focused on the civilian sector and stabilization, But, it is still obvious that the CFSP is actually the "Achilles' heel" of the EU. Opposing foreign policy positions of the member states were already noticeable during the war in the former Yugoslavia, the energy conflicts in the Mediterranean, during the pandemic COVID-19, and they are permanently present in the enlargement policy to the Western Balkans. "Europe can no longer be "totally dependent" on the US and the UK after the election of President Trump and Brexit", stated ex Chancellor Angela Merkel in 2017 (BBC, 2017) The European Union was once again faced with security uncertainty partnership with the USA during the American withdrawal from Afghanistan without consulting the allies, and after the formation of a trilateral, purely Anglophone, defense pact between Australia, the United Kingdom and the United States of America - AUKUS (2021), the existence of which the allies found out at the same time like the rest of the world. At that moment, it became clear that work on the concept of European strategic autonomy initiated by France should be accelerated in terms of protecting specific European interests in the area of common security and defense, as well as work on reducing economic dependence on foreign supply chains (EP, 2022). Faced with American protectionism and the growing economic expansion of China, but also with the renewed competition of the great powers, the European Union decided to confirm its role as a key geopolitical actor.

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<sup>2</sup> *The Chip and Science and Advanced Semiconductor Export Control Act (CHIPS ACT)* passed in October 2022 also applies to allies. Therefore, any investment in such sectors in China is automatically in conflict with US national security. Therefore, the USA does not intend to invest only in its own production capacities, but rather tries to completely exclude China from key supply chains, which puts Europe, especially Germany, in a very unfavourable position. (Weaver, 2022).

In her inaugural speech in 2019, EK President, Ursula von der Leyen announced a "geopolitical commission" and a new, very ambitious course for the European Union. The strategic commitment of the EU highlighted two important processes: the *European Green Deal*, which includes a comprehensive energy transition and the development of the digital economy (EK, 2020). However, the Russian invasion of Ukraine brought a turning point in European security policy - most European countries drastically increased defense spending, including Germany when the Federal Government launched a one-time special fund of 100 billion euros. NATO significantly strengthened its defenses on the eastern flank, while Finland and Sweden decided to abandon neutrality and join the Atlantic Alliance. The European Union finances military support for Ukraine from the *European Peace Fund*. Moreover, the changes in the European security order significantly affect the transatlantic relations as NATO has renewed its role by becoming the basis of the territorial defense of the member states, while the US has again increased its presence in Europe. However, the relationship of European strategic sovereignty to the transatlantic alliance remains ambivalent, and the sustainability of American commitment to European security in the context of strengthening American protectionist policies remains questionable. Above all, the EU's strategy for Russia is an unprecedented challenge. Namely, the relationship between the EU and Russia intersects with some unresolved issues arising from the collapse of the Soviet Union. What are the boundaries of the *Russian world*, what about the status of states in Russia's *near abroad* and what challenges arise from Russia's claim to great power status are crucial for the future of the European security order (Paikin, 2022). The EU *Strategic Compass* (March 2022), in which the EU defined the main directions of action in the field of security and defense policy for the coming decade, as well as the *NATO Strategic Concept* adopted in June, 2022 at the NATO summit in Madrid, emphasize cooperation in European defense. However, there is concern that they are not sufficiently integrated and coordinated, and the support of the United States is especially doubtful. Namely, although it is unlikely that US support for Ukraine will wane, there is no way that Washington will be able to maintain the current level of diplomatic engagement, deployment of forces and resources in Europe in the long term. The risk of conflict in Asia draws US attention to the Pacific again. It is expected that the United States will support Europe in its decision to take responsibility for its own security, "turning Europe from a security dependent into a true security partner." However, the transformation of European defense in response to the Russian invasion is full of challenges that burden transatlantic relations (Bergmann, 2022). Seventy years of peace in Europe, economic prosperity and technological progress, interconnectedness, multiculturalism, collective defense and security have collapsed at a rapid pace. The war in Ukraine completely changed the security atmosphere in Europe, after which the European Union subordinated itself to American geopolitical, military and economic interests, even though they are often in conflict with the national interests of some EU members.

### **3. THE UKRAINIAN CRISIS AS A SECURITY CHALLENGE FOR THE EU: GEOPOLITICAL ASPECT**

The Russian invasion of Ukraine launched in February 2022, which dramatically escalated the eight-year conflict, represents a historic turning point for the European security order, which has been shaped over the past decade in the context of exceptional security challenges and growing rivalry between the United States, China and Russia. With military action in 2008, which came as a response to Georgia's attempt to establish control over the separatist regions - South Ossetia and Abkhazia, and then by recognizing their independence, Russia expressed clear resistance to the further expansion of NATO to the east of Europe. Therefore, the Russian Military Doctrine, 2014 clearly indicated the main security threat for Russia: the expansion of NATO's military potential towards Russia's borders, which is why the installation and strengthening of NATO contingents in the countries of Russia's near abroad was on the list of

the key external threats for Russian national security (Mearsheimer, 2014). Especially after the annexation of Crimea in 2014, Russian foreign policy experienced a strong turn, which manifested itself through a confrontational attitude towards the West. Ukraine thus moved into the epicenter of the "new cold war" in Europe, which significantly influenced the cooling of relations between the West and Russia. The geostrategic significance of Ukraine derives from its position on the shores of the Black and Azov Seas and the configuration of borders that connect the Eurasian continental mass with Western Europe; Ukraine has long played an important but sometimes unnoticed role in the global security order. Today, the country is at the forefront of renewed great power rivalry that is completely changing the security order in Europe (Masters, 2022) That is how Ukraine found itself in a squeak, which is tightened since the 19th century until today, by the old colonial rivals, the Anglo-Americans. Ukraine's geostrategic position as a "geopolitical axis" or "pivot country" (Brzezinski, 1997), as well as the energy and other natural resources at its disposal, clearly indicate that the escalating crisis has a strong geopolitical background. Already in the 1990s, the American diplomat and political scientist, Zbigniew Brzezinski, revived Sir Halford Mackinder's theses according to which Eurasia (Heartland) is the greatest "geopolitical gain" and as such is crucial for the global primacy and dominance of the USA<sup>3</sup>. Therefore, the basis of American strategic action is maintaining influence over Eurasia, for Brzezinski, it is a chessboard on which the game for world supremacy continues. In this context, author recognized the important role of Ukraine on the *Eurasian chessboard*, without which Russia cannot have the status of an imperial state. The annexation of Crimea in 2014, which established control over a large part of the maritime territory with huge reserves of gas and oil, the securing of naval bases in Sevastopol, as well as the control of Abkhazia, allowed Russia to effectively control a significant part of the Black Sea, especially the Kerch Strait and the Sea of Azov, geo strategically extremely important. In the shadow of the Ukrainian crisis, and in the context of significantly changed geopolitical circumstances, the German issue is once again emerging as one of the key determinants of the security order in Europe. In the article "The New German Question: What Happens When Europe Comes Apart", the American historian Robert Kagan (Kagan, 2019) states that the failure of the European project or the end of the EU inevitably leads to the renewal of the German question, which in the past seven decades has had a decisive influence on contemporary Europe as well as on transatlantic relations. The collapse of the European balance of power order at the beginning of the 20th century resulted in two world wars. At the end of World War II, Germany was a defeated and divided country. American policy then worked to create a rules-based multilateral international order, not only to counter Soviet influence, but also to solve the existing German problem. As Kagan states, "some form of European unification, exclusively under the auspices of American security guarantees, was the only possible solution to the issue of Germany's relationship with the rest of Europe". The author elaborates few aspects of the post-war order that enabled the democratic evolution of Germany. The first aspect of the German transformation was the total commitment of the US to European security, which eliminated the need to arm European states (including West Germany).

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<sup>3</sup> According to Mackinder (Mackinder, 1904) Heartland - Russia and Germany, Baltic and Black Sea region - is the core of Eurasia controlled by Russia, at the beginning of the 20th century the biggest rival of the British Empire, and Germany as a strong continental power. Eurasia (Heartland) is the greatest "geopolitical gain" and as such is key to the global primacy and the dominance of the USA. Also, Alfred Tayer Mahan, an American naval historian, strategist, and geopolitical theorist at the beginning of the 20th century, believed that the imperial rivalry between Britain and Russia throughout Asia and the Middle East (*the Great Game*) would result in a war in which Britain would not be able to contain Russia's expansion in Asia without the support of its main allies. Expansionist Russia, which dominates the area of Eurasia, needs to be restrained by the alliance of the United States, Great Britain, France, Germany and Japan, exactly what happened between 1945 and 1991. In Mahan's view, Germany had emerged by 1908 as the most serious challenger to Britain and its unrivaled industrial and military power on the continent, and its pursuit of naval power posed a threat to Great Britain and finally to the United States. He also recognized China's powerful potential and foresaw a time when the United States would have to worry about China's rise, making the North Pacific necessary (Sempa, 2014)

In this context, Western European countries could dedicate themselves to the development and social welfare of their citizens, while West Germany had to renounce its own geopolitical ambitions. Although not completely - they have been replaced by geo-economic ones. One of the outcomes of this favorable geopolitical environment was reflected in a kind of "anchoring" of West Germany in the liberal West order. Temptations (occasionally present in German politics) to shape a more independent foreign policy were euthanized not only by economic interests, but also by a relatively calm security environment that allowed the West Germans to hold themselves to a high standard. And finally, the strengthening of common European and transatlantic values was the third key factor that helped to anchor Germany in the liberal order and contributed to the creation of a new European identity. Nevertheless, in the circumstances of increased security challenges, the return of the German question could not be avoided. Germany has again become the dominant power in Europe, and the realization of the geopolitics of *Mitteleurope* in the 21st century is reflected in the fact that Central Europe has become the German supply chain, actually part of the German economy, while the rest of Europe has become the German export market (Kundnan, 2019). According to author the post-Cold War unification of Germany and the establishment of the Eurozone under the leadership of Germany significantly disturbed the European balance, since an anti-German "common front" began to form outside Germany, which is reminiscent of the geo-economic version of the conflict within Europe that occurred after the German unification in 1871. But in Europe, in the 21st century, the dispute arose between allies and partners, especially democratic states that are part of the common European project. According to Kagan, this postmodern experiment left European nations disarmed in a world that never shared their optimistic, Kantian perspective. (Kagan, 2019). Europeans have long believed that global security would be preserved and that they would be able to avoid painful decisions on increasing military budgets in order to form their own army. They didn't have to do that until now, because the world seemed peaceful and secure from the European perspective, Kagan says. Through renewed geo-strategic competition with Russia, the US has launched an economic war against Europe, especially Germany, since the Obama administration. Namely, the unification of Germany in 1990, its renewed economic power, the dissatisfaction of some European countries with the American role in Europe, as well as the current tendency of greater geopolitical influence of the EU in global relations, imposed the need to review the relationship of the United States towards Europe. With the first enlargement of NATO to Poland, Hungary and the Czech Republic in 1999, areas that have never been under US influence before, the borders of the West, especially the United States and NATO were moved far to the east, which eliminated the possibility of restoring Russian influence in the area of Central Europe. With the second round of post-Cold War expansion, the NATO alliance, under the leadership of the United States of America, established a new European security architecture, gradually creating a *cordon sanitaire* towards Russia, exactly on its western and southern periphery. The entry of Romania and Bulgaria into the NATO alliance and the European Union had special significance for American interests in Europe. That is to say, the territory of these countries is strategically important for the United States because it represents a kind of bridge to the Black Sea, the Caucasus and the Caspian Lake, regions rich in oil, gas and other energy sources in which the US seeks to establish dominance. The new energy crisis is accompanied by a high demand for energy sources, therefore the strengthening of tensions between the leading actors of international relations is part of the new geopolitics that are formed through the efforts of major powers to establish control over oil and gas sources, as well as their transit routes. The *Great Gas Game* gradually affected Europe itself, where U.S. drew new lines of division. In other words, American policy increasingly perceives Germany as a strong geopolitical rival that directly competes with American trade and security interests, therefore the *Three Sea Initiative* (Polović, 2016) revived the geopolitical concept of *Intermarium*, developed by Josef Plisudski (1920), which refers to the creation of a

belt of states between Germany and USSR. (now Russia). In this context, the area from Norway and Finland, across the Baltic, including central, eastern and southeastern Europe, is presented as the western part of the Eurasian zone that surrounds Russia (but also China) and is subject to geopolitical pressures from two directions - towards its peripheral area from Russia, and towards the interior of the continent, primarily from the USA (Geopolitics – The Geography of International Relations (Cohen, 2008). Given its size, economic power, the right to vote in EU bodies, geopolitical position and military capabilities, Poland becomes the "natural" leader of the Initiative. Foreign policy goals and areas of cooperation enable members of the Initiative to protect national sovereignty from Brussels, monitor the reception of refugees and quotas for asylum seekers with firm support for NATO, which means emphasizing the role of the US and its interests in European security (Kurečić, 2018). Especially after Brexit the post-communist members of the EU gained in importance and became the backbone of the American strategy, strongly relying on the protection of NATO (the American "security umbrella"). Undoubtedly, the Russian invasion of Ukraine weakened the geopolitical importance of Germany and France as the countries on which the European security system is based. In the new order of the transatlantic community created in just a few weeks after February 24, Germany, together with the EU, readily transformed its foreign policy and adapted to the actions of the UK and the US, which took the lead in the resistance against Russia. According to Brzezinski (Brzezinski, 1997), Germany and France, located on the western edge of Eurasia, are very dynamic geo-strategic players, countries motivated by the vision of a united Europe. France is trying to play a central political role within a united Europe, it sees itself as the core of a group of Mediterranean and North African states, while Germany seeks to become the "locomotive" of the EU with a strong influence in Central and Southeastern Europe. Both countries represent European interests and are favorable of bilateral relations with Russia. However, former French President Charles De Gaulle's renewed vision of a united Europe (axis Paris-Berlin-Moscow) would cause far-reaching changes in the structure of NATO and inevitably lead to the weakening of American primacy within the alliance.

#### **4. DIVISION BETWEEN “OLD” AND “NEW” EUROPE: THE FUTURE CHALLENGE FOR EU**

The increasingly pronounced division between Old and New Europe, present since the American invasion of Iraq in 2003, took on new contours with the Russian invasion of Ukraine. Despite the formal unity, there are clear signs of divergence within the EU states on issues of migration, security and sanctions imposed on Russia. Most of the countries of the new Europe, especially Poland and the Baltic states, rely on the USA, while on the other hand, the core EU countries want to develop an EU defence policy, which does not exclude NATO, but would reduce its role in European security, especially in terms of Russia. Even after 2014, the outbreak of the crisis in Ukraine and Russia's annexation of Crimea, EU core states continued to advocate a diplomatic approach to Russia, although they condemned the annexation and supported EU sanctions against Russia. As a result, regardless of the formally key role of Brussels, the political centre of gravity for making security decisions in Europe has visibly moved towards the new members states in Eastern Europe, which are abandoning the Franco-German concept of strategic autonomy of the EU and are more inclined to a stronger role of the USA and NATO. That is, the strategy of the United States is rapidly collapsing the strategic legacy of the former German Chancellor Angela Merkel, who built an economically strong European Union led by Germany "on the foundations of the Eurasian economic belt whose extreme poles are represented by Germany and China with Russia connecting them" (Halevi, 2022). Anyway, the war in Ukraine ended the geopolitical vision of a common Eurasian space. Germany, as well as the EU, were forced to reconsider their relations with Russia - which (as part of the German Lebensraum) supplied Europe with cheap energy; as well as its relations with China - with

which they have the largest trade exchange. Such a massive free trade zone (Angela Merkel's concept) has been the basis of European prosperity in the past decades, and the basis of strengthening the geopolitical influence of the EU in the world. However, such a geopolitical concept was marginalized by the post-Cold War unipolar world order, which was shaped by the vision and interests of the USA. A possible German-Russian alliance could end American leadership on the international scene. On the contrary, the Ukrainian war has returned the EU to a position of subordination to the USA. Namely, although after the Russian-Ukrainian-European gas crisis in 2006 and 2009, Europe followed a diversification strategy focused on the construction of LNG terminals, nevertheless, in the period 2010-2020. continued the construction of oil and gas pipelines on which European prosperity was to be based. However, the concept of economic strengthening of the EU under the leadership of Germany, which did not respect the geo-strategic interests of the USA, could not succeed. The Russian invasion of Ukraine marked a turning point in German foreign policy (*Zeitenwende*), primarily a radical break with Germany's traditional Russian policy (*Ostpolitik*). In a speech delivered in February 2022, Chancellor Scholz committed to the establishment of a special fund of 100 billion euros and major investments in the military. The *Zeitenwende* is one of the most important recalibrations of German foreign policy since reunification in 1990. Germany has long hoped to leave its security to others - mainly the US, however, the Russian invasion of Ukraine exposed the shortcomings of this approach, which Chancellor Scholz acknowledged in his speech (Chatham House, 2022). Close relations with Russia have been a constant in German foreign policy since the 1970s, when Willy Brandt, as chancellor of West Germany, intensified economic and political ties with Russia. The post-Cold War German governments considered a good cooperative relationship with Russia necessary for peace in Europe and advocated a strategy of change through trade (*Wandel durch Handel*) that was supposed to democratize Russia. *Ostpolitik* and *Wandel durch Handel* "went through their first, small crisis – or reality check" – with the Russian annexation of Crimea in 2014, but both policies remained intact. However, the invasion of Ukraine in early 2022 strongly discredited them. Berlin is having a hard time dealing with the change in its foreign policy towards Russia, but also with the question of "how to adapt *Wandel durch Handel* vis-à-vis another – more important – economic partner: China" (ibid, Chatham House, 2022). It is increasingly apparent that Germany and France are unwilling to engage in a long-term Eurasian rivalry. For both countries, the end of the Cold War and the reunification of Germany, 1990, meant the possibility of returning to an autonomous European sphere. In this respect, German and French interests are aligned. For the United States, "New Europe" is, at the moment, a more useful partner than the traditional and possibly competing powers of "Old Europe". The Anglo-American intelligence (Five Eyes) and military domination of Europe compromises European strategic autonomy, i.e. the realization of the plans for the development of the European military industry, which were foreseen by the Berlin-Paris axis. Those plans did not receive the necessary support from the USA. It is therefore predictable that, in the decade ahead, the European continental powers (EU and Russia) will be permanently occupied with the stabilization of the long-term destabilized European continent. In the meantime, the NATO-bis alliance, the new alliance of the Anglosphere - AUKUS, will thus have the opportunity to completely devote itself to the struggle for hegemonic supremacy in the Indo-Pacific region, in which it should receive support from the EU, "which would open the chapter of hostilities towards China" (Vujačić, 2020). On the other hand, the US national security strategy will practice a new American isolationism (Friedman, 2022), in the sense that the US will not be militarily involved in regional conflicts, despite the fact that it will support its allies with massive arms shipments, training and education. However, there will be no direct military engagement. For the US, maintaining global dominance is a prudent strategy. In this context, the role of NATO in the European security architecture was emphasized, which means that the European military industry will

certainly develop, but only within the framework of NATO. No deviation from this seems possible. As the EU mainly functions according to the Anglo-American "geopolitical software", due to strong fractures, the crisis on the European continent may lead to a system revolution and political, economic and social destabilization of the European Union (Vujačić, 2022).

## 5. CONCLUSION

In the context of direct US geopolitical competition with Russia and China, the new U.S. National Security Strategy (2022) highlights the complex connection of security challenges in the area of Eurasia, which pose a threat to the global dominance of the USA. What does the new US National Security Strategy mean for the EU? Namely, until recently the current concept of European strategic autonomy, which affirmed the specific economic and military interests of the EU, was marginalized by the Ukrainian crisis. Thus, in the circumstances of an expectedly *long European war*, the security architecture of the continent is shaped by the instruments of the American security strategy, which is not always compatible with the interests of the EU. The fact is that the European Union is very poorly prepared for the period of great power rivalry. There is no doubt that due to the numerous security challenges that Europe is facing in the last decade, the stability of the European security order established after the Cold War is becoming questionable. The imbalance of power in defence between the EU and the US plays out through the new armaments of Poland and Germany, while managing relations with Russia remains a major challenge for Europe. Although the US may take the short-term lead in overcoming Europe's security challenges, European countries will ultimately be forced to bear the brunt of these efforts, given that Washington will soon turn its attention to China, which it sees as the main challenger to its global dominance. In this context, European governments and EU leaders, despite all existing divisions, should be guided by the idea of unity. Which means that the European Union needs to create foreign policy strategies that are adapted to each challenging scenario and that include all member states, leaving aside the special interests of each of them.

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## DIGITALIZATION PROCESS IN BUSINESSES: THROUGH EFFICIENCY TOWARDS PERFORMANCE

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### **ABSTRACT**

*The 21st century, the digital era, has brought new technologies, innovations and trends. Despite all the hardships it entailed, Covid-19 pandemic paved the way to digitalization and increased use of digital tools in all areas of life, in particular personal life, public life, as well as business life. The process of digitalization in Slovakia is substantial, too. The aim of Slovakia's digitalization strategy is to get Slovakia on the single digital market map and at the same time prepare the country for a full-scale digital transformation of the economy and society. With regard to the above, the aim of the paper is to evaluate and compare the efficiency of businesses` digitalization process across EU countries. The Malmquist index based on the principles of the DEA method was chosen for the efficiency analysis. The analysis made use of the digitalization process data for the years 2019-2021. The paper expands knowledge of the efficiency of the digitalization process of enterprises doing a business in EU countries. The attention should be paid to attracting foreign talents, the introduction of artificial intelligence (AI) and blockchain. With regard to AI, countries need business entities that can provide sophisticated and competitive solutions. Slovak business entities must learn to use these solutions to reduce their costs and increase performance. These results serve as a benchmarking tool to learn from more advanced countries in the given process. Implementation of elements of digitalization process is necessary for ensuring the economic growth of businesses not only in times of crises, but also in terms of performance.*

**Keywords:** *business, digitalization process, efficiency, Malmquist index, performance*

### **1. INTRODUCTION**

The COVID-19 pandemic has highlighted the pitfalls of doing business in a global and volatile economy. The COVID-19 and its aftermath have highlighted the need for manufacturing businesses to become more flexible and introduce digital business models. Digitalization has become a necessity in all areas of life, especially due to COVID-19. However, the origins of digitalization date back to the period before the outbreak of the pandemic. Digitalization represents a paramount process started some decades ago, which was strongly accelerated by Industry 4.0 and COVID-19 pandemic and now directly impacts all the process and manufacturing sectors. It is expected to allow the European industry to increase its production efficiency and its sustainability (Branca et al., 2020). A very important area in the digitalization process is digitalization in industrial production. Thanks to digitalization, traditional processes has transformed into more efficient digital systems, thereby ensuring the improvement of dozens of production, supply and other functions of the business entities, including e.g. increasing performance, shortening production and delivery cycles, increasing quality and eliminating errors, limiting the generation of waste (for example through dematerialization), optimizing operating costs, improving the user experience and managing supply chains more efficiently (EMANS, 2020). When talking about digitalization today, technology is the number one topic.

Even though technologies are an important tool, the mindset of people inside the company is, however, of crucial importance. People should pay attention to improving the functioning of the business and economic benefits, too (Trend, 2021). Digitalization is associated with better business performance, especially in terms of productivity, management practices, innovation, growth and better-paid jobs (ECA, 2020). It has been shown that digital technologies play an important role in the development of the industrial base of enterprises as well as in the efficient use of resources, increase the long-term sustainability of enterprises on the market and reduce the risk of going bankrupt. They can reduce costs and improve the flexibility and sustainability of production systems (Demartini et al., 2019). The level of digitalization in businesses is measured by the Digital Intensity Index (DII). It is a composite indicator derived from a survey on the use of information and communication technologies (ICT) and e-commerce in businesses. A company's DII score (0-12) is determined by the number of selected digital technologies, which it uses. The higher the score, the higher the digital intensity of the enterprise. The composition of the DII varies between surveyed years depending on the questions included in the survey, so comparability over time may be limited (European Commission, 2021a; European Commission, 2021b). In 2021, 56% of businesses in the EU have reached a basic level of DII. The basic level means the use of at least four of the twelve selected digital technologies (such as the use of any artificial intelligence technology; e-commerce sales make up at least 1% of total turnover, etc.). The basic level includes enterprises with low, high and very high levels of the DII, excluding the very low level. Of the small and medium-sized enterprises (SMEs), 55% achieved a basic level of digital intensity, compared to 88% of large enterprises. Only 3% of EU SMEs achieved a very high level of digital intensity, while 18% achieved a high level. Most SMEs reported a low (34%) or very low (45%) level of digital intensity (Eurostat, 2022). As for Slovakia, a total of 56% of enterprises achieve a very low degree of digitalization, 28% a low degree, 14% a high degree, 2% a very high degree of digitalization. The biggest proportion of enterprises reaching a very high level of the DII was in Finland, Denmark and Malta (all 10%) and Sweden (9%). Meanwhile, Romania and Bulgaria were lagging behind with around three quarters of enterprises characterised by a very low digital intensity (77% and 74%, respectively). According to one of the targets of the Digital Compass – the EU's vision for the decade of the digital transformation - more than 90% of EU SMEs should reach at least a basic level of digital intensity by 2030. In 2021, EU SMEs were 35% shy of the ambition set in the Digital Compass (Eurostat, 2022). The remainder of the paper is structured as follows: Section 'Literature review' defines digitalization and studies the relationship between digitalisation and other important phenomena such as efficiency or performance. Section 'Data and methodology' specifies the source of the data and describes the Malmquist index used to assess the efficiency of the digitalization process in businesses within EU countries. Section 'Results' offers the results of the change in efficiency over time in EU businesses calculated with the use of the Malmquist index and compares the development of the implementation of selected digitalization elements in Slovak businesses. Section 'Conclusion' states conclusions, limitations and future research.

## **2. LITERATURE REVIEW**

Digitalization has been identified as one of the major trends affecting and shaping society and business in the near and long term future (Kääriäinen et al., 2017). According to Muro et al. (2017; In Gartner Glossary, 2015) digitalization is the process of employing digital technologies and information in order to transform business operations. Instead from the perspective of Gray and Rumpe (2015) digitalization is simply a word used to represent the integration of various technologies into all aspects of everyday life. Gartner Glossary (2015) defines digitalization with a more business-oriented focus: Digitalization is the use of digital technologies to change the business model and provide new revenue and value creation

opportunities; it is the process of transitioning to a digital business. This definition includes relationships between various businesses, except business and government, and vital relationships with customers. The goal is to implement digitalization in such a way that there is a clear relationship between the services offered by businesses and the actual needs of customers. The efficiency of the digitalization process has been confirmed in several studies. The following authors and their research results can be mentioned. Digitalization brings many benefits. These include reducing costs and increasing productivity. It enables innovation and, in particular, is the driving force behind product and service innovation across sectors (Capgemini Consulting, 2011). The use of ICT has made it possible to create new business models since the last century. Currently, the tendency is to digitalize everything that surrounds society, as a result of the ICT revolution. These actions create a large difference in performance between digitalized and non-digitalized companies, causing large differences between them. Digitalization is a new indicator of business performance, so it is necessary to include digitalization in performance measures and indicators (Fernández-Portillo et al., 2017). Rejman Petrovic et al. (2022) measured the efficiency of the use of information and communication technologies in businesses in order to assess the intensity and success of their digitalization process. Research sample consisted of businesses in the Republic of Serbia. To analyze the efficiency of digital business transformation the Data Envelopment Analysis (DEA) was applied, while for the robustness analysis of values of average efficiency they used bootstrapping method. They revealed that the process of digital business transformation in the Republic of Serbia is relatively efficient. The efficiency of e-commerce in businesses in most years was over 80%, on the other hand the use of software packages was insufficient. Kao et al. (2022) also applied DEA to investigate efficiency in implementing a digital transformation in Taiwanese firms. The study resulted in defining the inputs and outputs for the evaluation of performance of digital transformation of businesses. Authors also proposed performance evaluation approach which can help businesses to minimize risks associated with digital transformation. Do et al. (2021) studied the impact of digital transformation on performance of Vietnamese commercial banks. They applied the GMM system (SGMM) of Blundell and Bond. To test the robustness of the estimated model they performed Bayesian analysis. The results of the research revealed that digital transformation has a positive influence on the performance of Vietnamese commercial banks. Zhang et al. (2021) confirmed that digital technology supports the efficiency of corporate production through cost reduction, efficiency improvement and innovation. Using the data of manufacturing companies listed on the Shanghai and Shenzhen stock exchanges from 2009 to 2017, they created a difference-in-differences (DID) model to examine the relationship between digital transformation and production efficiency. The results showed that the introduction of digital transformation is a significant factor supporting economic benefits and the results of the lag regression method are still robust. Zhai et al. (2021) confirmed that the digital transformation process has an impact on business performance. Based on the results of their study, it can be concluded that a company that has introduced digitalization elements has lower costs, better efficiency and significantly better performance. In his study, Hautala-Kankaanpää (2022) confirmed the performance of the digital transformation of the supply chain. Furthermore, he confirmed that supply chain performance influences the relationship between digital platforms and operational performance. This study further confirms that digital culture is a significant factor that describes differences in the effects of digital elements on firm performance. Ekinci (2021) evaluated the impact of digitalization on banks' performance. While each bank's technical efficiency score was obtained using DEA, the impact of digitalization on financial performance was estimated using a "truncated regression model combined with bootstrap confidence intervals". Truncated regression model revealed that digitalization has a positive effect on financial performance.

The aim of the study by Cherkasova and Slepushenko (2021) was to determine the relationship between the financial performance of Russian companies and the degree of digitalization of their business processes. The authors used operating profit as the main financial indicator expressing the results of the companies' current key activities. As a research method for hypothesis testing, they applied regression analysis. Research sample consisted of the data of 482 companies from 20 industries for the period 2017-2019. The results of the study showed that the digitalization index has a positive impact on the operational efficiency of companies, but the degree of impact varies depending on the industry, age and size of the company. The authors concluded that the greatest effect from digitalization is observed in companies with traditionally high digital maturity. These are companies doing a business in the financial, technological or communication industries, where digitalization is vital and a slowdown in digital transformation processes can push such businesses far behind in the ranking. In line with the above-mentioned the aim of the paper was to calculate the efficiency of businesses' digitalization process across EU countries with the use of Malmquist index and compare the achieved results.

### 3. DATA AND METHODOLOGY

For the empirical research were selected indicators that affect the process of digitalization in the businesses within EU countries. These are indicators that represent the fields of E-commerce, Connections to the internet, Websites and use of social media, E-business and ICT security. The following inputs were used: E-commerce sales, Use of computers and the internet by employees, Type of connections to the internet – broadband connection, Websites and functionalities, Use of mobile connections to the internet, Cloud computing services. GDP per capita and unemployment rate were used as outputs. Several methods can be used to estimate distance functions, which are the starting point for calculating TFP. Linear programming is most often used, especially the Data Envelopment Analysis (DEA) method proposed by Färe, Grosskopf, Norris and Zhang in 1994 (Fandel, 2002). The use of DEA models to calculate TFP is related to the assumption that homogeneous data are available over several periods. Calculating the change in efficiency requires solving four linear programming problems, assuming the use of technology with constant returns to scale (Fandel, 2002).

Suppose that each  $DMU_j (j = 1, 2, \dots, n)$  uses a vector of inputs  $x_j^t = (x_{1j}^t, \dots, x_{mj}^t)$  to produce vector of outputs  $y_j^t = (y_{1j}^t, \dots, y_{mj}^t)$  at each period of time  $t, t = 1, \dots, T$ . Efficiency of  $DMU_0$  can change or the frontier can shift or both changes may occur in the same time. The Malmquist Productivity Index is then defined as follows (1) (Zhu, 2014):

$$MI_0 = \left[ \frac{\theta_0^t(x_0^t, y_0^t)}{\theta_0^t(x_0^{t+1}, y_0^{t+1})} \frac{\theta_0^{t+1}(x_0^t, y_0^t)}{\theta_0^{t+1}(x_0^{t+1}, y_0^{t+1})} \right]^{\frac{1}{2}} \quad (1)$$

where  $MI_0$  measures the change in productivity between the periods  $t$  and  $t + 1$ .  $\theta_0^t(x_0^t, y_0^t)$  is calculated by comparing  $x_0^t$  to the EPF (Empirical Production Frontier) at time  $t$  with the use of input oriented CRS DEA model, while  $x_0^t = (x_{10}^t, \dots, \dots, \dots, x_{m0}^t)$  and  $y_0^t = (y_{10}^t, \dots, \dots, \dots, y_{s0}^t)$  are the input and output vectors of  $DMU_0$  among others. Similarly  $\theta_0^{t+1}(x_0^{t+1}, y_0^{t+1})$  is calculated by comparing  $x_0^{t+1}$  to the EPF at time  $t+1$ ,  $\theta_0^{t+1}(x_0^t, y_0^t)$  by comparing  $x_0^t$  to the EPF at time  $t + 1$ ; and  $\theta_0^t(x_0^{t+1}, y_0^{t+1})$  is calculated by comparing  $x_0^{t+1}$  to the EPF at time  $t$  applying input-oriented CRS DEA model.

This model is also available in its modified form (2) (Zhu, 2014):

$$MI_o = \frac{\theta_o^t(x_o^t, y_o^t)}{\theta_o^{t+1}(x_o^{t+1}, y_o^{t+1})} \times \left[ \frac{\theta_o^{t+1}(x_o^{t+1}, y_o^{t+1}) \theta_o^{t+1}(x_o^t, y_o^t)}{\theta_o^t(x_o^{t+1}, y_o^{t+1}) \theta_o^t(x_o^t, y_o^t)} \right]^{\frac{1}{2}} \quad (2)$$

According to Fandel (2002) the term (3) represents the change in technical efficiency, it is the efficiency known according to Farrell (1957). The change in efficiency is equivalent to the ratio of Farrell's efficiency at time  $t$  and at time  $t + 1$  (technical efficiency change between periods  $t$  and  $t + 1$ ). Usually, this term expresses the improvement, deterioration or stability of technical efficiency.

$$\frac{\theta_o^t(x_o^t, y_o^t)}{\theta_o^{t+1}(x_o^{t+1}, y_o^{t+1})} \quad (3)$$

The term (4) represents the frontier shift (FS) in the EPF between periods  $t$  and  $t + 1$  (Zhu, 2014).

$$\left[ \frac{\theta_o^{t+1}(x_o^{t+1}, y_o^{t+1}) \theta_o^{t+1}(x_o^t, y_o^t)}{\theta_o^t(x_o^{t+1}, y_o^{t+1}) \theta_o^t(x_o^t, y_o^t)} \right]^{\frac{1}{2}} \quad (4)$$

The values of indicators can be interpreted as follows:

- $TECH > 1$  the efficiency of the DMS improved, it approached production possibility frontier, the decisions taken were correct,
- $TECH = 1$  the efficiency of the DMS did not change,
- $TECH < 1$  the efficiency of the DMS declined; the decisions taken were incorrect.

TECH informs about a change in technical efficiency but does not inform about a shift in production possibility frontier as a result of technological change. This is reported by frontier shift as follows:

- $FS > 1$  the efficiency increased and the frontier shifted outwards,
- $FS = 1$  efficiency frontier did not shift,
- $FS < 1$  the efficiency declined and the frontier shifted inwards. This index informs about the change within the entire EU.

#### 4. RESULTS

The efficiency of the implementation of individual digitalization elements in EU enterprises is expressed using the MI and the results are presented in the table 1. The results indicate that the efficiency has decreased in almost all countries except Lithuania, Croatia and Slovenia. Slovakia achieved a lower efficiency value between 2020 and 2021, as the MI decreased from 1.04 to 1.01. Based on the achieved value above 1, it is possible to confirm that the process of introducing digitalization elements in Slovakia is efficient.

*Table following on the next page*

DMUs	Malmquist Index 2019 - 2020	Malmquist Index 2020 - 2021
European Union	1.03	1.01
Bulgaria	1.21	1.11
Latvia	1.12	1.00
Poland	1.11	1.02
Greece	1.11	0.96
Luxembourg	1.09	0.97
Romania	1.08	1.05
Hungary	1.08	0.99
Netherlands	1.06	0.95
Portugal	1.05	1.00
Germany	1.05	1.03
Austria	1.04	0.98
Cyprus	1.04	1.00
Slovakia	1.04	1.01
Czechia	1.03	0.95
Italy	1.03	1.01
Finland	1.03	0.96
Estonia	1.03	0.93
Malta	1.03	1.00
Spain	1.02	1.03
Belgium	1.02	1.00
France	1.02	1.00
Sweden	1.02	1.00
Denmark	1.01	0.99
Ireland	1.00	0.97
Lithuania	0.99	1.03
Croatia	0.99	1.01
Slovenia	0.97	0.99

Table 1: Malmquist index 2019-2021  
 (Source: processed by authors in software DEA Frontier)

The change in the technical efficiency of the use of digitalization elements and its comparison over time is shown on the figure 1. A significant improvement was achieved in the case of Slovakia, as the technical efficiency increased from 0.98 to 1, thus Slovakia reached the required value of technical efficiency, which was even higher compared to the EU. In the EU, the technical efficiency of the digitalization process reached a value of 0.99 in 20/21. This value is higher by 0.01 compared to 19/20. This increase is minimal, but nevertheless it can be considered positive. However, the fact that the technical efficiency of the digitalization process did not reach the value of 1 can be evaluated negatively.

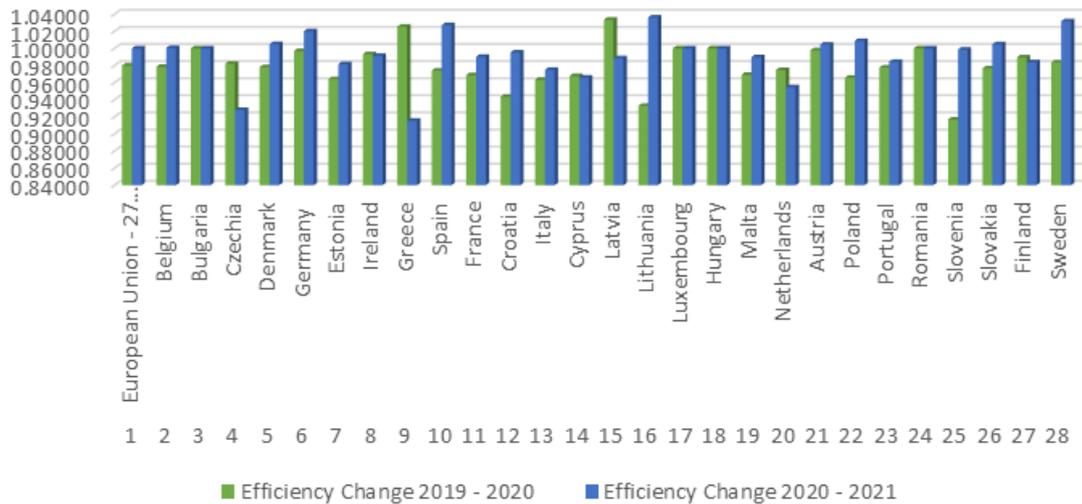


Figure 1: Comparison of the change in technical efficiency calculated by Malmquist index  
 (Source: authors)

The development of frontier shift within the EU decreased from 1.05 to 1.01 in 2020-2021 (see figure 2). However, we positively assess the fact that in both evaluation periods the value of technical efficiency change in the EU was above 1. Based on this, it can be concluded that the number of digitalization elements introduced in the EU continues is growing and the digitalization process is proceeding successfully, but is slowing down. This slowdown in the period 2020-2021 occurred in every EU country.

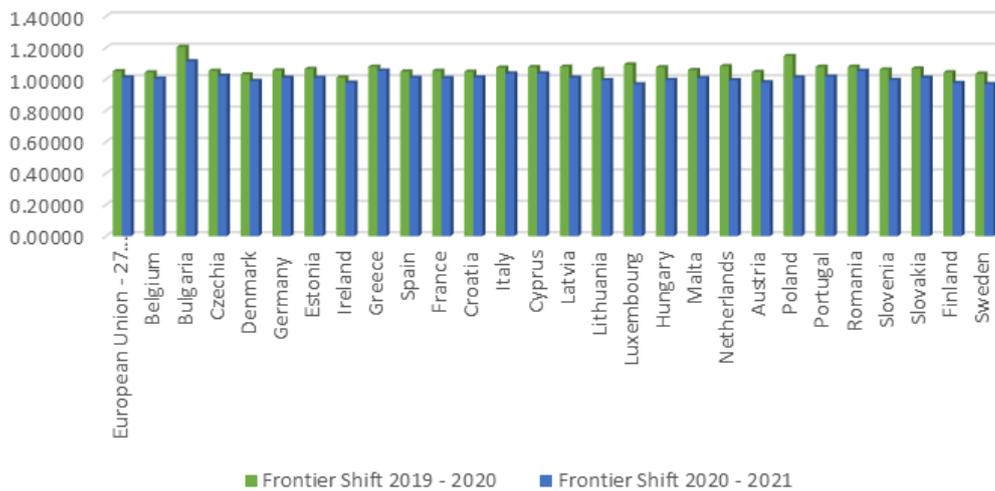


Figure 2: Comparison of the Frontier shift calculated by Malmquist index  
 (Source: authors)

Figure 3 shows the development of selected digitalization indicators in Slovak businesses, processed on the basis of data from Eurostat. The results show that Slovakia achieves a low % coverage of companies that use this service in the field of E-commerce sales. Approximately the same number of enterprises have established cloud computing services, but this number is growing year by year.

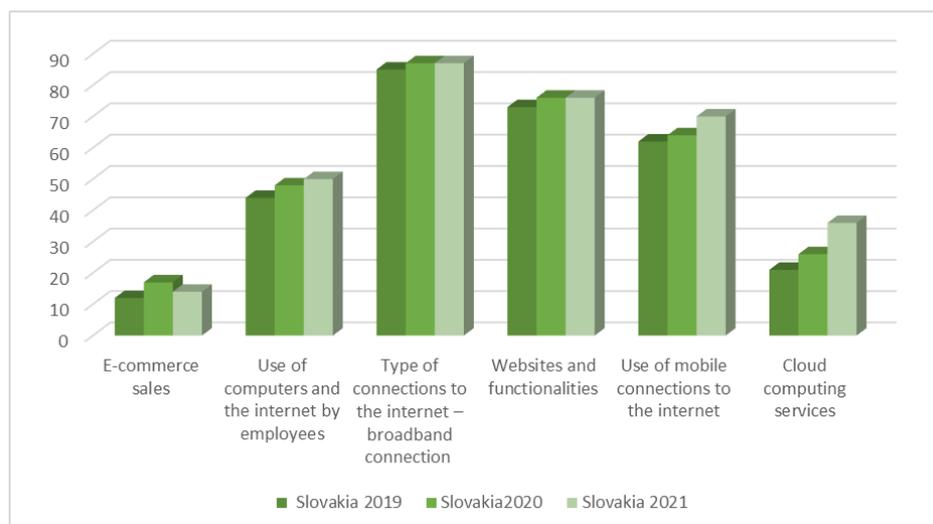
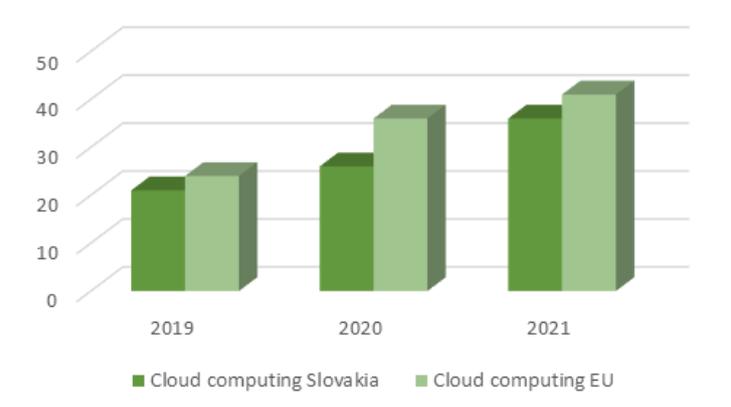


Figure 3: Development of selected digitalization elements of businesses in Slovakia  
 Source: processed by authors based on Eurostat (2022)

One of the most significant digitalization elements in the business environment is the introduction of cloud computing services.

The comparison of the introduction of this digitalization element in Slovakia with the EU average is shown in the figure 4. The EU average is higher in each of the analyzed years than the coverage of cloud computing services within the Slovak Republic expressed in %. Cloud computing brings several benefits to businesses. It is primarily about the availability of data from anywhere, flexible configurability, low costs and security. In the case of regular data, 16.96% of small businesses, 16.96% of medium-sized businesses and 14.44% of large businesses within EU use this storage (Eurostat, 2022).



*Figure 4: Development of cloud computing services - Slovakia compared to EU average  
Source: processed by authors based on Eurostat (2022)*

## 5. CONCLUSION

The introduction of digital technologies into businesses has the potential to improve their services to customers, improve the quality of their products and increase their competitiveness. Basically, digitalization is a prerequisite for reducing costs and increasing business performance. The crisis caused by the COVID-19 pandemic has also shown that digitalization is key to improving the economic resilience of businesses. Slovakia lags behind in the introduction of elements of digital transformation in businesses compared to the EU and the leaders in the field. Compared to the EU, there are 12% more enterprises in Slovakia that show a very low level of introduction of digitalization elements. However, it is necessary to point out that, despite the fact that Slovakia ranks 22nd-23rd in the implementation of individual elements of digitalization, the efficiency of the introduction of individual elements of digitalization is good. Although the rate decreased during the years 2020-2021, the MI value of 1.01 indicates that the given process is still effective. The technical efficiency, which reaches a value of 1, and frontier shift, which also reaches a value of 1, are commendable. Based on the above, it is necessary to state that it is important to monitor not only the % of business entities that have introduced digitalization elements, but also the effectiveness of the introduction of these elements and the efficiency of their use. In future, research will focus on digitalization elements in the introduction of which the EU, as well as individual EU countries, lag behind. However, a significant role in this process is played by the approach and mindset of the management of business entities, as well as the lack of financial resources. That is why the support of the government, various support measures and financial aid that will support and speed up this very important process is very beneficial. When introducing elements of digitalization, it is necessary to focus on several technological trends that will make the transformation a bit easier. It is necessary to evaluate the capacity possibilities of Slovakia and the perspective of the development of the given trends in Slovakia. If Slovakia wants to succeed, it must focus on those technological trends that must be completed before any digitalization can take place. With regard to the EU, significant investments are needed beyond the capabilities of some countries.

The attention should be paid to attracting foreign talents, the introduction of artificial intelligence (AI) and blockchain. With regard to AI, countries need business entities that can provide sophisticated and competitive solutions. Slovak business entities must learn to use these solutions to reduce their costs and increase performance. Only those companies that have created mechanisms for using applications in the cloud will be able to use advanced AI. Unfortunately, in terms of cloud solutions, Slovakia is lagging behind. It is also due to the fact that 60% of GDP is made up of 50 large business entities that are subsidiaries of foreign companies and these implement cloud solutions in their foreign headquarters. If business entities in Slovakia will not learn how to use the cloud, they will not be able to use AI. One of the limitations of the given research is data on the digitalization process, in particular insufficient and missing data and the short time period for data collection, especially in terms of the digitalization process in Slovakia. The future research will pay increased attention to the collection of data, especially from available secondary sources, as well as primary ones that will be collected via questionnaire. The questionnaire items will inquire the way Slovak businesses introduce digitalization elements and the effectiveness of their use.

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# CREDIT RATING PREDICTION USING MACHINE LEARNING TECHNIQUES: A BIBLIOMETRIC ANALYSIS

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## **ABSTRACT**

*Credit rating is the assessment of the financial situation of a state, a company or an individual, i.e. it is a criterion for granting credit. Advanced prediction methods, such as machine learning methods, are increasingly used to predict credit ratings due to their high accuracy. In this paper, a bibliometric analysis of papers dealing with machine learning methods for credit rating prediction is performed. The data used for the analysis is retrieved from the two most relevant scientific databases, Web of Science Core Collection (WoSCC) and Scopus. As part of the bibliometric analysis, the authors used several analysis techniques: citation analysis, co-citation analysis, co-authorship analysis and keywords analysis. Keyword analysis shows that all articles mainly deal with 3 machine learning techniques - support vector machines, neural networks and decision trees. The main conclusion is that the research area of machine learning for credit rating prediction is still under-researched, as there is a relatively small number of articles dealing with this topic. Moreover, the observed papers are not so frequently cited and have a low number of mutual links, which shows that their importance is not so high.*

**Keywords:** *Bibliometric analysis, Credit rating, Machine learning, Forecast, Prediction*

## **1. INTRODUCTION**

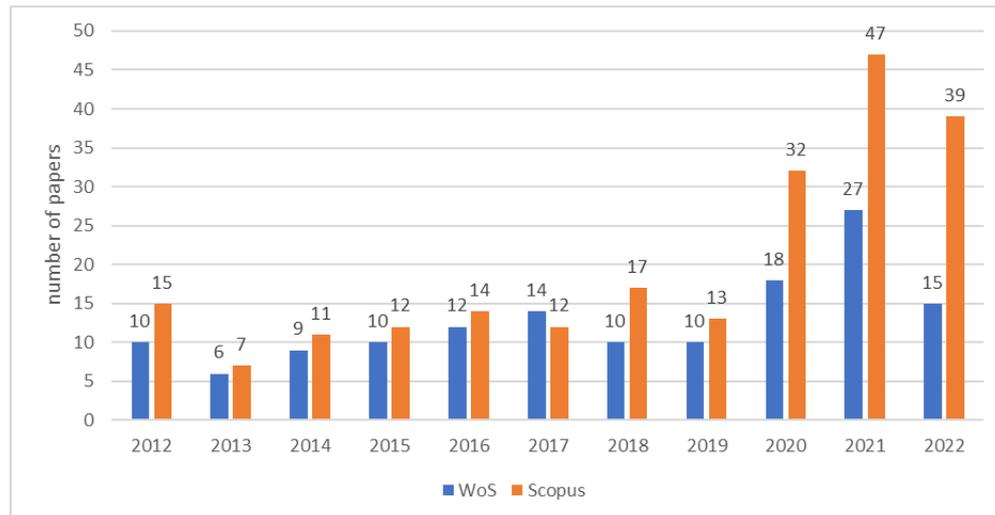
Credit rating is a quantified assessment of a borrower's creditworthiness in general or in relation to a specific debt or financial obligation (Kagan, 2022) and indicates whether a company has a history of financial stability and responsible credit management (Abiyev, 2014). According to Golbayani et al. (2020), it is an indicator of the level of risk in investing in the company and represents the likelihood that the company will pay its financial obligations on time. According to Kagan (2022), individual credit scores are calculated by credit bureaus on a three-digit numerical scale, using a form of the Fair Isaac Corporation (FICO) credit scoring. Credit ratings for companies and governments are calculated by a credit rating agency such as S&P Global, Moody's, or Fitch Ratings. These rating agencies are paid by the entity seeking a credit rating for itself or one of its debt issues. According to Abiyev (2014), the basic factors that affect credit rating are payment history, amounts owed, length of credit history, new loans, and type of loans. Feng et al. (2020) state that assessment process is very expensive and complicated and often takes months because many experts are involved to analyze all possible variables that reflect the reliability of a company. Therefore, machine learning techniques have recently been widely used to evaluate creditworthiness, as they are based on historical data and have a relatively high predictive accuracy. The purpose of this paper is to perform a bibliometric analysis of the publications dealing with machine learning models in credit rating prediction. According to Donthu et al. (2021), bibliometric analysis is a popular and rigorous method for exploring and analyzing large volumes of scientific data. The bibliometric methodology involves the application of quantitative techniques (citation analysis) to bibliometric data (units of publication).

This paper attempts to answer the following research questions:

- 1) What is the trend in research using machine learning methods to predict credit rating?
- 2) How strong are the citation relationships between publications in the observed field?

## 2. METHODOLOGY

The data used for the bibliometric analysis were retrieved from the two most relevant scientific databases, Web of Science Core Collection (WoSCC) and Scopus, in November 2022. The following keywords are used to search for articles in both databases: ("credit rating" AND ("machine learning" OR "data mining" OR "decision tree" OR "neural network" OR "support vector machines")). The time period used for the analysis was 2012-2022 and the language of the publications was English. The search resulted in 141 articles from WoSCC and 219 articles from Scopus. Figure 1 shows the number of articles published by year. From this Figure, it can be seen that more than 2/3 of the articles in this section were published in the last 3 years.



*Figure 1: Number of published articles by year  
(Source: Authors, according to WoS and Scopus search)*

As part of the bibliometric analysis, the authors used various analysis techniques: citation analysis, co-citation analysis, co-authorship analysis, and keywords analysis. According to Donthu et al. (2021), in citation analysis, the impact of a publication is determined by the number of citations it receives. The analysis makes it possible to identify the most influential publications in a research area. In co-citation analysis, two publications are associated with each other if they appear together in the reference list of another publication. The advantage of using co-citation analysis is that, in addition to finding the most influential publications, business scholars can also discover thematic clusters. Co-authorship analysis examines the interactions between scholars in a research area. Keyword analysis assumes that keywords that frequently occur together are thematically related. The results of the bibliometric analysis are presented using VOSviewer, a tool for constructing bibliometric networks. The analysis is performed separately for Wos and Scopus papers, as VOSviewer does not have the capability of combined analysis.

## 3. RESULTS AND DISCUSSION

This section presents the results of the bibliometric analysis. At the beginning, a short overview of all analyzed publications is given, i.e. an overview of the publications by country and journal.

### 3.1. Overview of analyzed publications

Table 1 shows that research on machine learning for credit rating prediction is mainly conducted by authors from China, followed by Taiwan, the United States, the United Kingdom, and India, and the results are the same for both databases.

No.	WoS		Scopus	
	Country	Number of papers	Country	Number of papers
1	China	48	China	70
2	Taiwan	12	Taiwan	19
3	USA	12	USA	17
4	England	11	India	15
5	India	7	United Kingdom	14

*Table 1: Overview of published articles by countries  
 (Source: Authors)*

The papers analyzed were published in 112 different journals in the Web of Science and 154 journals in the Scopus database. The three publications with the largest number of articles in WoS are Expert Systems with Applications (IF: 8.665) - 9 papers, Knowledge-based Systems (IF: 8.139) - 4 papers and Applied Soft Computing (IF: 8.263) - 4 papers. The Scopus database results show that the top three journals are Expert Systems with Applications, Lecture Notes in Computer Science (LNCS) - 8 papers and Journal of Physics: Conference series - 7 papers. From this overview, we can see that there is a very wide range of journals where authors publish their papers on the application of machine learning techniques in predicting credit rating. Accordingly, we cannot recommend other authors to publish similar research papers in specific journals.

### 3.2. Analysis of the keywords

To answer the first research question, "What is the trend in research using machine learning methods to predict credit rating?", the occurrence of the most frequently used keywords is analysed. In the WoS database, there are 603 different keywords from a total of 141 articles. The minimum number of occurrences of a keyword was set to 5, and a total of 31 keywords were found to meet this threshold. In contrast, the analysis of keywords from Scopus revealed 1,426 keywords for a total of 219 articles. When the same threshold (5) is applied, we obtain 73 keywords. The results are shown in Table 2.

No.	WoS		Scopus	
	Country	Number of papers	Country	Number of papers
1	Support vector machine(s) or SVM	59	Credit rating(s)	135
2	Credit rating(s)	53	Rating	83
3	Neural network(s)	41	Risk assessment	57
4	Risk	26	Decision tree(s)	53
5	Classification	22	Machine learning	51
6	Machine learning	19	Neural network(s)	42
7	Prediction	18	Support vector machine(s) or SVM	42
8	Credit risk	18	Forecasting	38
9	Feature selection	18	Data mining	36
10	Bankruptcy prediction	15	Learning systems	30

*Table 2: Overview of the most used keywords  
 (Source: Authors)*

From Table 2, it can be seen that the articles in WoS and Scopus have different keywords. For example, the studies indexed in Web of Science mostly focus on the "credit rating" part of the paper, as they often use terms such as: credit rating, risk, credit risk, bankruptcy prediction, etc. If we look at Figure 2, we can see that the frequency of keywords such as "machine learning," "feature selection," or "Big Data" is greater from 2019.

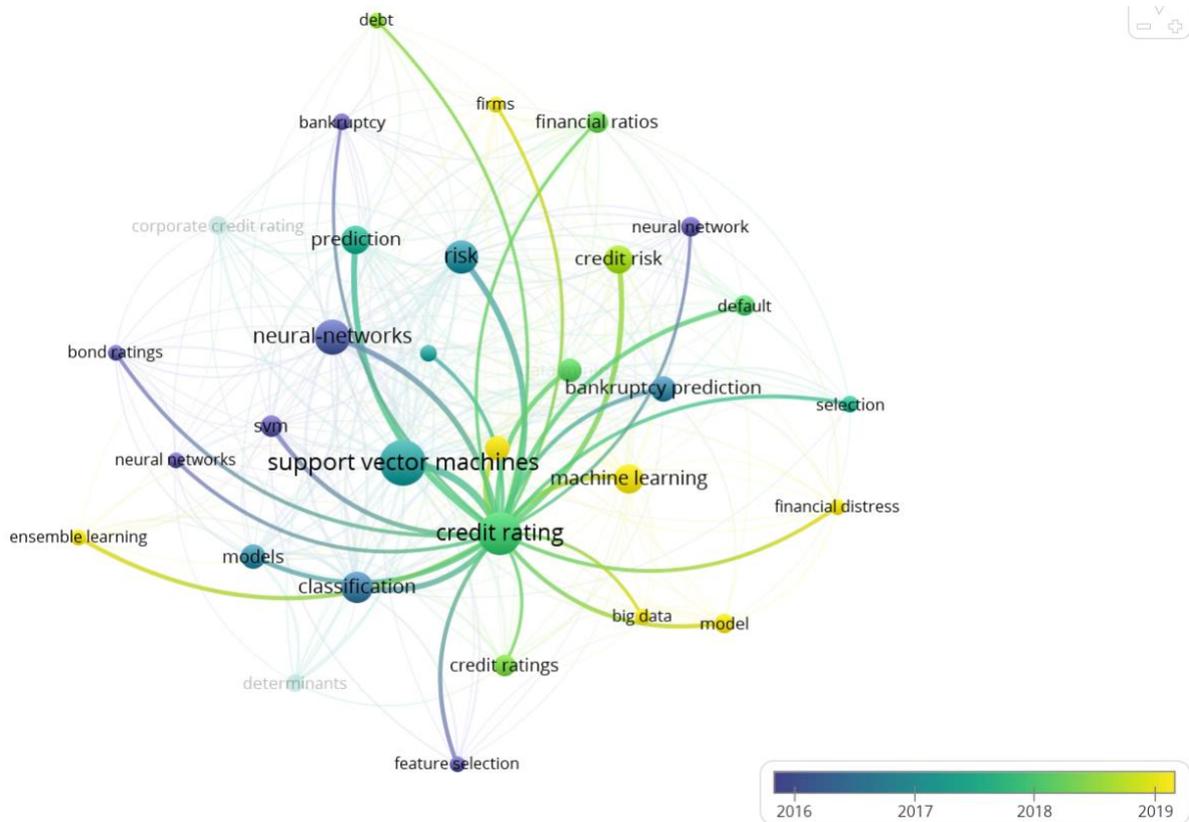


Figure 2: Overview of the most used keywords in WoS  
(Source: Authors)

On the other hand, Scopus articles mainly focus on the "machine learning" part or the application of ML techniques, as these articles frequently use the keywords: decision trees, machine learning, support vector machines, neural network, forecasting, data mining, learning systems, etc. Figure 3 shows that these terms have been used mainly in the last two years.

Figure following on the next page



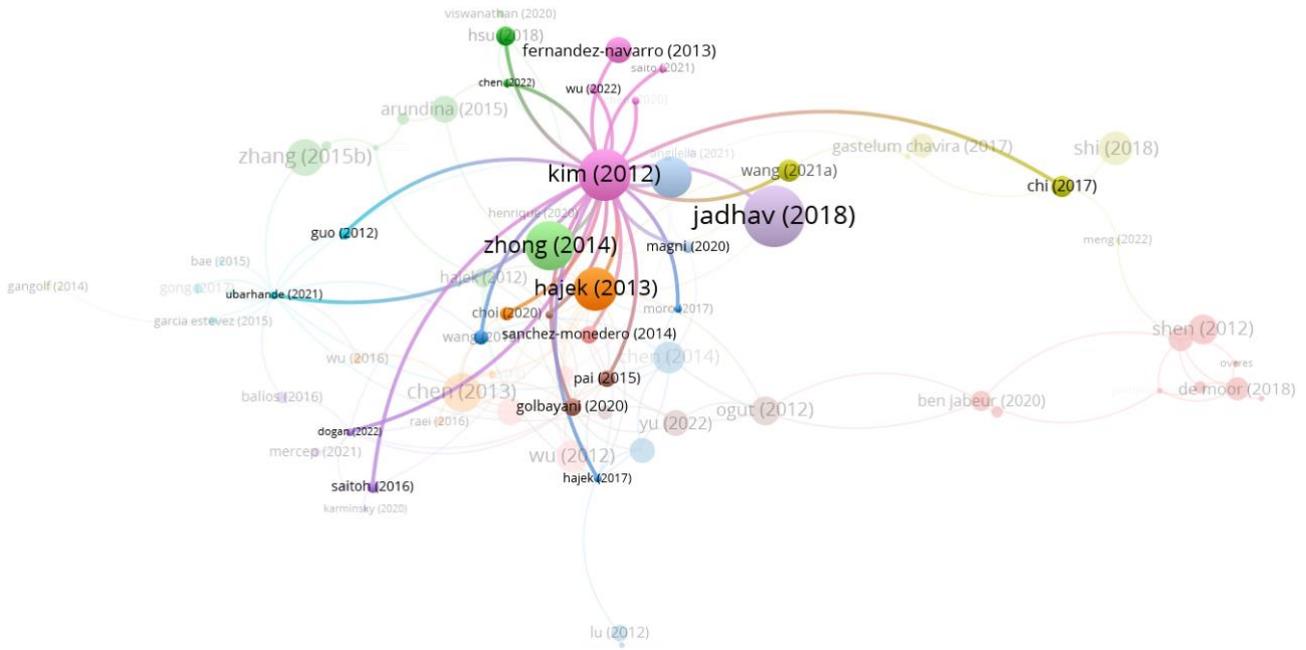


Figure 4: Overview of citations in Web of Science  
(Source: Authors)

As shown in the figure above, the most cited author (128 citations) is Jadhav, S. and his article *Information gain directed genetic algorithm wrapper feature selection for credit rating published in Applied Soft Computing in 2018*. However, the author with the largest number of mutual links (25 links) is Kim, K.-J., who wrote the article *A corporate credit rating model using multi-class support vector machines with an ordinal pairwise partitioning approach in the journal Computers & Operations Research*.

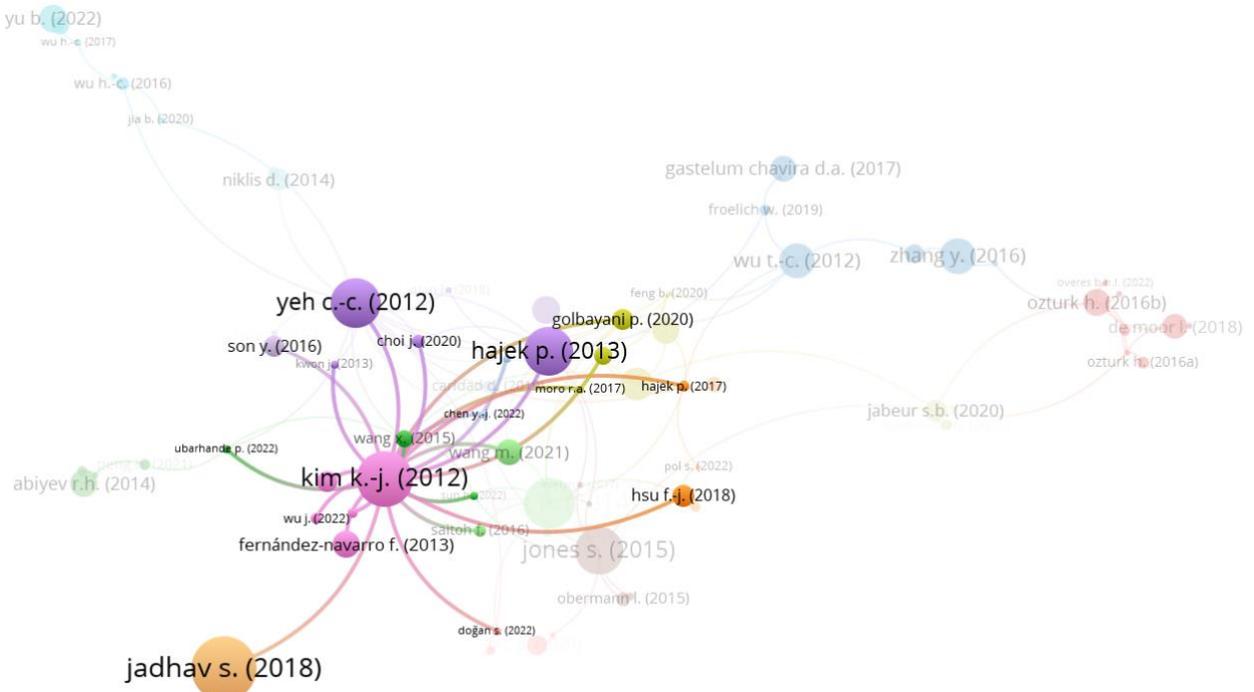


Figure 5: Overview of citations in Scopus  
(Source: Authors)



For comparison, in the WoS database, this threshold was reached by 108 papers. For this reason, the authors chose a threshold of 3, resulting in 59 papers.

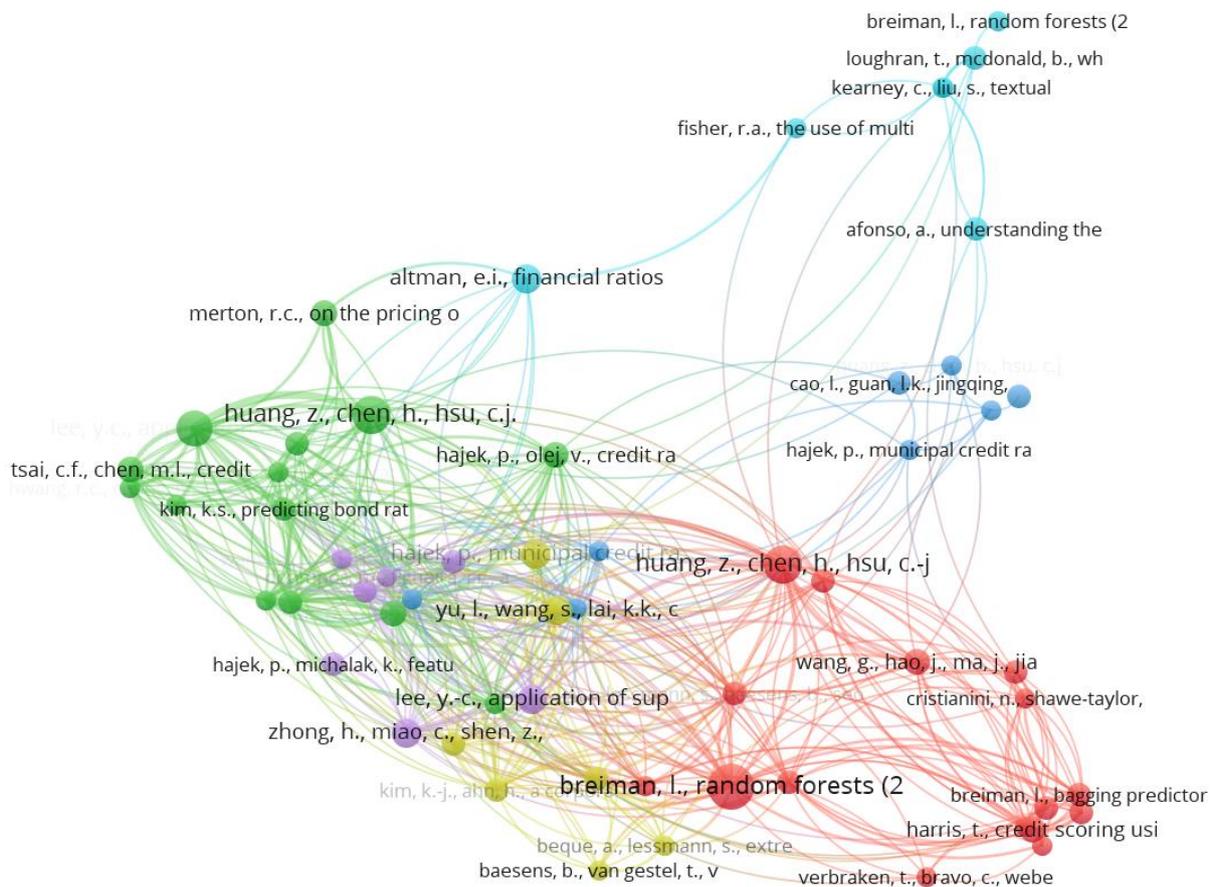


Figure 7: Overview of co-citations in Scopus  
(Source: Authors)

As in the previous case, the analysis of this network shows that the most cited paper was *Credit rating analysis with support vector machines and neural networks: a market comparative study*, written by Huang et al. (2004). It has 20 co-citations and the total link strength of 101. The next paper is *Random Forests*, written by Breiman (2001). It has 14 co-citations and total link strength of 49. This was the first paper where a Random forest, as a decision tree predictor, was introduced. In third place is the paper *Application of support vector machines to corporate credit rating prediction*, written by Lee (2007), which has 9 co-citations and a total link strength of 45.

#### 4. CONCLUSION

After the conducted bibliometric analysis, it can be concluded that the research area about machine learning predictions of credit rating has not been sufficiently explored. In the last 10 years, only a few hundred papers have been published dealing with this topic. Fortunately, more than 50% of them have been published in the last two years which means that more and more authors are aware that modern data mining and machine learning techniques can be more accurate in predicting credit rating than some traditional mathematical or statistical methods. The observed papers were published by a large number of authors in more than a hundred different journals with different impact factors and quality.

By analyzing keywords, it can be seen that all those papers mostly deal with 3 machine learning techniques – support vector machines, neural networks and decision trees.

#### 4.1. Limitations of the study

The main limitation of this study was the sample. Bibliometric analysis is usually conducted on large datasets with several thousand bibliographic units (papers). However, this research topic is relatively new and only in the last few years has it begun to be significantly investigated. Also, there are certain limitations in the analysis software itself - VOSviewer. Namely, it is not possible to conduct a joint analysis of both databases - WoS and Scopus, but the data must be analyzed separately. It was also noticed how in the same dataset (e.g. data from Scopus) the same paper, from the same authors, is displayed differently, and for such papers the citation and total link strength are displayed separately, and it is not possible to merge such papers.

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## THE YOUTH (UN)EMPLOYMENT IN THE ERA OF GREEN ECONOMY – SOME ASPECTS OF THE PROBLEM

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### **ABSTRACT**

*In the context of contemporary discussions about the post-industrial, post-fordist, risk and networked societies of advanced capitalism, special attention is directed towards analyzing the issue of transformation of work. Young people are especially exposed to work transformations, various insecurities and uncertainties on the labor market, an increase in non-standard forms of work and precarious employment, and an increase in unemployment. This has long-term negative effects on economic growth, and in the countries of the EU numerous financial programs try to find solutions for the quick and active inclusion of young people in the labour market. Therefore, special attention is directed towards the green economy, which is expected to solve or reduce the problem of youth unemployment. In those discussions about the effects of the green economy, proponents, skeptics and transformationalist can be distinguished: the first one, the solution to the problem of youth unemployment consider in the context of the development and opening of green jobs; the second one, warn that the problems will remain unsolved as a result of capitalist conditions of production that do not comply with the conditions and principles of sustainability; the third one, indicate the necessary prerequisites such as the development of new knowledge and skills in the field of ecological literacy that need to be fulfilled in order to transform the world of labor in the direction of a green economy. Nevertheless, for numerous educational institutions and social actors in the EU, including the Republic of Croatia, these topics are still theoretically and empirically insufficiently represented.*

**Keywords:** *ecological literacy, green economy, labor market, transformation of work, youth (un)employment*

### **1. INTRODUCTION**

In post-industrial capitalist societies, under the influence of information technology and digitization, the labor market is transforming, which is reflected in the increase in flexibility and liberalization of work and employment, the decline in the level of workers social rights and the increase in the number of portfolio workers. The number of employees in the “pre-industrial primary and the industrial secondary” production sectors is decreasing, while the number of employees in service activities is increasing (Bell, 1973, 14). Therefore, in post-industrial societies the influence of knowledge, science and technology on the labor market increases, which leads to an increase in “professional, technical” and digital occupations, while the employment of “skilled workers” decreases (Bell, 1973, 15). The development of information technologies in the “networked societies” also leads to greater “individualization of the workforce and the work process”, the emergence of new, more flexible forms of work and employment (e.g. solo-self-employment and temporary work), and to a new type of worker, i.e. “temporarily employed workers” (Castells, 2000, 294-295). Thus, we are moving from a “labor society” characterized by security in working relationships and full employment to a “risk society” characterized by insecurity in all areas of life (Beck, 2000).

Insecurity and flexibilization are inseparable from work and employment in contemporary capitalist societies where workers, especially young people, are offered mostly precarious and short-term jobs, fixed-term contracts and precarious working conditions. In the series of changes that Beck announces in the context of globalization and the reflexive modernity of post-industrial "risk societies", climate change and social inequality are only part of the global problems, the consequences of which will be especially felt by some social groups, i.e. Beck's "globalization losers" (Beck, 1992; Beck, 2000). The lack of resources necessary for life and the shortage of food and drinking water are just some of the consequences of climate change that will encourage a large population to migrate, especially those who are living in poverty, from economically less developed and unstable countries burdened by corruption and bad governance. According to White (2011), social conflicts related to climate change are not determined only by environmental changes, but are a reflection of previously established social inequalities. Thus, in additional difficult (future) circumstances and conflicts over natural resources, social inequalities will deepen, and social groups and individuals who already have weaker economic, political and social power will face even greater insecurity, which Giddens announced in the context of "late" or "high" modernity characterized by rapid structural and cultural changes (Giddens, 1990; Giddens, 1991). Among the groups that especially feel the consequences of (global) climate, economic and structural changes, women, the elderly, migrants, the population of less developed countries and young people stand out. The transition of young people into the world of adults first occurs when they leave the education system and enter the labor market. This is a particularly sensitive period for young people, as they face numerous challenges in the labor market, which mainly offers young people opportunities in lower-paid jobs in service industries. In addition to limited opportunities and opportunities to find dignified employment, young people also face high unemployment rates. According to UN (2021), more than 71 million young people are currently unemployed and looking for work, which is why economic experts predictions of around 60 million new jobs by 2030 due to the transition to a green economy rise optimism. The International Labor Organization (ILO) states "that the green transition can create millions of jobs, but these are conditioned by the availability of relevant skills and training" (ILO, 2019, 188). Starting and developing new green jobs in the conditions of a green economy requires adjustment of the labor market and the introduction of new educational programs in the education system through which young people will acquire the knowledge and skills necessary for green employment. The transition to a green economy does not completely abandon the capitalist idea of economic growth and development, but in conditions of increased social awareness of climate change, the economy adapts to new circumstances, that is, to a market that promotes the idea of work, production and consumption in conditions of greater energy efficiency and less harmful impact on the environment. The possibility of harmonizing the necessary environmental protection with economic, i.e. green growth is the basic idea of the green economy. This is the frame from which the increasingly emphasized need to develop ecological literacy as an integral part or element of "late modernity" and "reflexive modernization" is arising (Kalanj, 1996; Giddens, 1990; Giddens, 1991; Beck, 1992; Beck, 1996). Namely, according to Beck (1996, 89), the transition from the industrial society of "simple" modernization to the "reflexivity of modern society and modernization" can be illustrated by the example of awareness or actualization of the "ecological issue". The first societies aimed at "uncontrolled economic growth" that did not take into account the ecological consequences of this growth, thus deepening the "ecological crisis", and the second aims at "self-changing the foundations of industrial modernization", rather than "self-destruction" (Beck, 1996, 89). In this theoretical perspective, "reflexive modernization" is an increase in "social reflexivity" about the various consequences of "late modernity" and "real ecological literacy is possible only in symbiosis with the process of reflexivity" (Kalanj, 1996, 399-400).

## **2. GREEN ECONOMY AND GREEN JOBS FOR YOUTH - UTOPIA OR REALITY?**

The basis of the capitalist system is the constant expansion of the market and the profits, which most often implies the constant exploitation of natural and human resources. If companies and economies globally demand endless economic growth and profit based on the exploitation of resources, a logical question arises, how will economies function within the framework of green capitalism and what changes will occur within the framework of the green capitalist system? Bookchin (1990, 94) states that "any attempt to make capitalism ecological is already doomed because endless growth is the very nature of the capitalist system". The idea of the incompatibility of economic growth and sustainable development was followed by Sachs (1999), who states that sustainable development in the capitalist system is an oxymoron because sustainable development depends on the demands of different interests and policies that wanted to reconcile environmental problems and economic growth. The global financial crisis and the COVID-19 crisis affected on youth around the world who faced numerous challenges in education and the labor market, and due to the negative consequences of the crisis, the risk of youth dissatisfaction and mental disorders increased. Depression and economic deprivation of young people are not only individual problems, but problems of the whole community because they can have serious consequences for the economy and on politics. Therefore, the issue of mental health and employment of youth is an important political and economic issue. The development of technology and digitalization affect the dynamics of the labor market by increasing efficiency, but at the same time reducing the need for human labor, especially in traditional occupations and jobs. The need for highly specialized workers in the STEM field is growing, and employment growth in new green jobs is also predicted. The global turn towards green policies and the green plan requires analysis and understanding from different perspectives, which was already announced by Held and his colleagues earlier in the theoretical conception of globalization. The classification into skeptics, hyperglobalists and transformationalists (Held et. all, 1999) can be useful for the analysis of different positions towards the green economy. Proponents of green capitalism believe that growth and profitability can be achieved in the conditions of a green economy by switching to technology and energy systems that consume less resources and energy. They believe that by switching to green technology new markets will open up and enable to corporation economic growth and profits. Adaptation to the new green conditions of production will also start opening of new green jobs. The green economy is based on the idea that it is possible to establish a balance between economic growth and the environment. This idea is supported by a number of international organizations that consider the green economy as a way out of this state of over-exploitation of resources, destruction of the environment and deepening poverty of countries and people in the South, which are particularly affected by the environmental crisis. Thus, the United Nations states that the green economy, while reducing environmental risks, will reduce poverty, inequality between the global North and the global South, and improve people's well-being (UNEP, 2011). On the other hand, critics of green capitalism warn that the environmental issue has only become a means to save the market and ensure growth, and that it is impossible to balance economic growth and sustainability. From the Marxist point of view, a change in the production system in the conditions of a sustainable and green economy cannot occur without structural changes, that is, without a change in social and production relations develop in accordance with the ideas of the ruling class. Given that the idea of a green economy is born as a response to an ecological and economic crisis, marxists reject the possibility of changing class relations in the conditions of a green economy which arising from crises because in crises the existing social and economic positions of the powerful and rich are stabilized or additionally strengthened (Brand, 2015, 117). The state of the global environmental crisis poses demands on political leaders for an urgent solution to the problem, which requires an interdisciplinary approach and appreciation of the experiences of those societies that are particularly affected by

the consequences of capitalist production and consumption. The European Environment Agency defines a green economy as one in which “environmental, economic and social policies and innovations enable the efficient use of resources that contribute to the well-being of people and the preservation of ecosystems” (EEA, 2012). In their strategic documents, the OECD and the UN state that the implementation of the goals and principles of the green economy requires an adequate political framework that supports environmental tax reforms, public investments in sustainable infrastructure, research and development of environmentally friendly technologies, investment in the public sector, development of public policies that harmonize social and economic needs and the importance of international cooperation through multilateral environmental agreements (OECD, 2011; UNEP, 2011). The adaptability of the political framework to the demands of the competitive global market comes to the fore especially in the countries of the global South rich in natural metals that are needed for the production of high-tech (green) products and the greening of the economy of the global North. We see the paradox of the green economy in this relationship of the global North, which for production and transition to green technology needs materials owned by countries in the South, whose exploitation destroys the environment and nature. This fact calls into question the change of existing capitalism and the transition to green global capitalism, which obviously does not change its basic assumptions of exploitation of the South and exploitation of natural and human resources of poor countries. The corpus of theoretical knowledge about sustainable and green growth and the economy of the last two decades indicates the great interest of scientists in this topic. Although there are a number of different theoretical insights on the green economy, Kenis and Lievens (2015) state that the different theoretical approaches nevertheless have some common links. The first point of “connection” refers to markets, that is, it is based on the idea that new markets mean new investment opportunities (Kenis and Lievens, 2015, 6). This means that a market economy can be compatible with environmental protection and the idea of sustainability because new markets will be launched to trade artificial products (e.g. emission rights) and new green products (e.g. electric cars) and ideas that through technology become increasingly numerous (Kenis and Lievens, 2015, 6). That is, the opening of new green markets is presented as a potential opportunity to get out of economic crises. The discourse on green economy rests on the idea of sustainable consumption, sustainable green entrepreneurship, green and socially responsible companies, sustainable investments and the development of new business models, products and services (Kenis and Lievens, 2015, 6). Green entrepreneurs strive through changes in business to establish pragmatic business practices and opportunities in which they will achieve financial profit with responsible consumption of resources and with less impact on the environment (O'Neill and Gibbs, 2016). The business world is full of green business networks and companies whose programs include the principles of green business that they apply in all segments of work, from production, service provision, relations with workers, consumers and the environment. They state that in all their activities they are guided by the principles of social and economic justice, environmental sustainability, health and community development with a low carbon footprint (Taberham, 2021, 155). Sustainable and green business requires the development of new green businesses as well as the adaptation of existing businesses to new green working conditions. Green jobs also refer to emerging jobs, i.e. jobs that did not exist on the market until the emergence of green companies and businesses, such as environmental manager or environmental consultant, and also refer to existing jobs in agriculture, production, research and development, administrative and service activities that contribute to environmental protection (UN, 2021; OECD, 2011). Green collar jobs or green jobs are associated with environmentally friendly products and services and with work that contributes to a sustainable economy and a better environment.

Green jobs connect technology, sustainability policies and entrepreneurial spirit through the application of innovative ideas and sustainable business models in different industries, and include different new and traditional occupations (Deitche, 2010, XV, 153). The demands of environmental change affect all aspects of people's lives, reshaping society, organizations and the world of work (Taberham, 2021). Organizations and individuals are expected to take social, economic and environmental responsibility to prevent further environmental destruction and preserve resources for future generations, which includes building sustainable cities and communities, responsible use of drinking water, saving energy, producing local and organic food by using cleaner production processes, energy-efficient green construction with minimal waste, green transportation using alternative transportation systems, protection of ecological systems and preservation of biodiversity, reduction of waste and consumption, and use of renewable energy sources (Taberham, 2021, 8, 9). With the green economy, they are trying to overcome and correct the mistakes of the market economy and capitalism that brought us to the state of ecological crisis. In this new social relationship to the environment, a rational use and relationship to natural resources is required. In addition to the economic and ecological components, the green economy also has an impact on the social aspect because it is related to the quality of life, health care, work status, people's awareness, social engagement and the education system, and has the potential to solve some social problems, such as employment. Education of young people in primary and secondary schools and programs at universities play a major role in the development of ecological awareness and responsibility towards the environment, and in imparting the knowledge and skills that future green experts need to perform green jobs. The transition from a market economy to a green economy not only requires new knowledge and skills for green business, but also requires the formation of new training programs and lifelong education, because workers already involved in the labor market will need to be qualified to perform green jobs or to produce green products and provide green services. Environmental responsibility in everyday life and in the world of work requires the acquisition and application of new knowledge, skills and qualifications and the change of some traditional professions and sectors that are not energy efficient and harmful to the environment. Employers who switch to sustainable and green business will also ask their workers to adapt to green working conditions and meet the needs of green workplaces, which is why part of the workers will be included in various retraining and training programs, as well as in the educational programs of secondary schools and universities that prepare future workers need to include knowledge about the environment that will prepare young people for green workplaces and jobs. During the Global Youth Employment Forum held in Abuja in 2019, young people expressed high concerns about the availability and quality of health care, unemployment and climate change. The concern of generation Z about climate change is quite justified considering that they will be faced with increasingly worse consequences of climate change in the future. The results of a global survey on a sample of 2,229 young people from 53 countries show that 95% of young people are worried about the climate crisis and their future in conditions of a global climate crisis, and among the surveyed young people, a higher level of concern is expressed by young people in countries with a higher income and young people with a higher level of education compared to young people from countries with a lower income and a lower level of education (Plan International, 2022). The assessment of the respondents' knowledge of the green economy shows that about 14% of the young respondents believe that they have a high level of knowledge about the green economy, and a total of 63% of the young people recognized the knowledge and skills for responsible environmental management as the most important for solving the environmental crisis, and that the current education systems need reform and connect knowledge about climate change with other scientific disciplines, e.g. law, economics, biology, etc., because only 29% of young people believe that the current education system prepares them for green jobs (Plan International, 2022).

As mentioned earlier, awareness of climate change encourages the development of new economic relations, business, production and work models, and young people with their more modern education and digital knowledge have greater potential in adapting to new green jobs than is the case with workers who are on the labor market for a long time. In addition to new digital skills and environmental literacy, green jobs also require lifelong learning and a wide range of training programs especially for vulnerable groups, i.e. young people with a low level of skills, as well as flexibility and adaptability to changes and new market demands (OECD, 2014). Environmental literacy is a key prerequisite for the development of environmental awareness and the acquisition of green business knowledge and skills. That is why environmental literacy needs to be included in the early stages of education and encouraged through lifelong learning.

### **3. ECOLOGICAL LITERACY AS A PREREQUISITE FOR GREEN JOBS**

„Environmental or ecological literacy“ is broadly defined as “knowing the codes for communication between people and nature, appropriate to the level of development” (Cifrić, 2012, 96). Defined in this broader way, environmental literacy “has multiple levels: historical and practical”, and includes “multiple aspects: cultural (civilizational), educational, political, etc.” (Cifrić, 2012, 96). It “applies both to the individual and to society”, and “means to understand the principles of organization common to all known life systems developed by nature (ecosystems) during evolution” (Cifrić, 2012, 96). In this regard, it is not only about having certain knowledge, but also “rules and principles” that can be considered as conditions for “achieving sustainability” (Cifrić, 2012, 96). In a narrower sense, environmental literacy can be explained by its focus on the following questions: “what and how much do people know about the environmental problem”; “what is the social distribution of this knowledge”; “how is this knowledge used in shaping everyday life and structuring public power” etc. (Kalanj, 1996, 398). According to Kalanj (1996, 398), from this questions the determination of ecological literacy as a set of “experientially accumulated, scientifically organized and generalized knowledge that is constantly being increased in terms of theory and research, formally and educationally standardized and popularized through information and media” is defined. In this regard, the emphasis is on “scientifically organized and generalized knowledge” (Kalanj, 1996, 399). Furthermore, in modern societies and in the context of globalization, “global environmental literacy and education” is required (Cifrić, 2012, 96). In addition, in order to speak about ecological literacy, we must “learn to understand nature and communicate with it”, and in order to achieve this “we must determine ourselves according to it” (Cifrić, 2012, 96). In modern societies, this is acquired through various agents of socialization (peers, civil society, media, social networks, etc.), but primarily through and “during institutional education”, which “respects less (personal and collective experience) and more scientific knowledge about biosphere” (Cifrić, 2012, 96). In this regard, we speak about the “ecological upbringing“, the “ecological education“ and the “ecological learning“, which are sometimes used as synonyms (Cifrić, 2012). “Ecological upbringing” as a term is associated with the young generation, and refers to “transmitting a system of ecological values that structure ecological awareness”, and promoting “alternative values to anthropocentrically oriented civilization”, and “ecological civilizing” (Cifrić, 2012, 106). Another term is “environmental education” and it refers to “the process of transfer knowledge about environmental problems and possible solutions”, and is “an unavoidable prerequisite for encouraging sustainable development and improving human abilities to deal with environmental development issues” (Cifrić, 2012, 112). The term and concept of “environmental upbringing in the sense of the general information” was developed in the “70s and mid-80s” of the 20th century; from the “mid-80s to the end of the 90s” the concept of “environmental education in the context of counseling and public work” was developed, and from the end of the 90s “environmental education“ is increasingly discussed as

“education for sustainable development in the context of participation and ecological communication” (Cifrić, 2012, 112). The third term is “ecological learning”, and it refers to the “continuous adoption of the increased scientific knowledge of the natural and social sciences about ecological complexity, the connection between nature and society, the ecological crisis”, as well as about possible solutions because it “includes the process of applying new knowledge and practical procedures” (Cifrić, 2012, 113). According to Cifrić (2012, 113), ecological learning consists of several levels: (a) spiritual-rational (“the problems of human behavior with nature and the environment are understood, and rational actions with the consequences of human activity are considered”); (b) sensory-emotional (“emotional relationship towards nature in dealing with it”); (c) normative-valued (changing “individual values, adopting a holistic approach and ethical norms”); (d) active-practical level (application of “knowledge and abilities in the environment and increasing awareness of environmental problems”). Therefore, we can define environmental literacy as a consequence of continuous environmental learning, especially in the context of creating green jobs, which requires not only knowledge, but also their application and action. In other words, green jobs require environmental literacy, that is, “knowledge” so that we can “act on what” we “created with our knowledge” (Kalanj, 1996, 387). Or in short, “an individual must know in order to act” (Kalanj, 1996, 400). In this sense, “an ecologically literate person does not accept the belief that nature protection means a return to the pre-industrial era” (Kalanj, 1996, 399); an ecologically literate persons, with a developed ecological awareness, should apply the knowledge acquired through the process of ecological learning when performing various roles in society: “as consumers, community members, employees or employers, family members, investors” etc. (UN, 2021, 14). For example, green jobs within “sustainable agribusiness and fisheries“, or “organic farming and green food manufacturing“ could be “more innovative and sustainable through the use of climate-smart technology to mitigate and adapt to climate change“ (UN, 2021, 8). On the following pages of the paper, we will place the issue of developing ecological literacy in the context of contemporary Croatian society, in which the theme of the “Civic Education (CE)” and the “Education for Democratic Citizenship (EDC)”, about their inclusion into the public education system has been updated. The mentioned topic has been open since the mid-nineties of the 20th century, since when various programs appeared, whose carriers were mostly “civil society organizations, institutions of higher education and engaged individuals” (Baketa, Ćulum, 2015, 7). In addition, back in 1999, the Government of the Republic of Croatia adopted the “National Program of Education for Human Rights”, which included “preschool education, classroom teaching and subject teaching” in “primary and secondary schools“, but this program was “never systematically implemented”, while some activities were carried out partially, unevenly and “by different actors” (Baketa, Ćulum, 2015, 8). Since then, laws in primary and secondary education have been changed (which did not leave enough space “for the implementation of this type of education”), different strategies and plans have been adopted, various decisions have been made, such as the “Decision on the experimental implementation of the civic education curriculum in 12 primary and secondary schools in the Republic of Croatia” from 2012 (which was abandoned after a two-year experimental implementation), and instead of the planned introduction of CE as a separate education course, in 2014 “interdisciplinary teaching and a new curriculum were introduced” (Baketa, Ćulum, 2015, 8). Then from 2019/2020, the new experimental program “School for Life”, which includes CE as one of the cross-curricular topics, is introduced and implemented. However, even though there was a lack of political will to introduce CE as a separate education course, examples of good practice regarding its implementation in Croatia can be singled out. Namely, the City of Rijeka since the 2016/2017 school year allows pupil’s from the 5th to the 8th grade of elementary school to attend the CE

as a separate course, i.e. extracurricular activity<sup>1</sup>, and this "Rijeka model" has been adopted by some other cities and counties. However, despite the examples of good practice for primary schools, based on the review of the relevant literature that we present in this part of the paper, we can claim that in Croatia CE is still "not systematically institutionalized and implemented in primary and secondary schools" (Šalaj, 2015, 241), and that there was no systematic inclusion of contents related to EDC and human rights "as mandatory in primary and secondary schools" (Batarelo et al., 2010, 17), but some activities, contents and topics related to CE are still carried out cross-curricularly, partially and unevenly. In addition, we cannot talk about the systematic implementation of these contents in higher education, nor the evaluation of students civic competences, but again only about some "examples of good practice of domestic universities in the context of evaluating students competences", which were acquired "by participating in extracurricular activities" (Baketa, Ćulum, 2015, 22). It is similar with "Education for democratic citizenship" (EDC). Namely, after the "National Human Rights Education Program" from 1999, "human rights education became part of the mandatory content" at the preschool education level, while at the elementary and secondary school levels "it did not begin to live as a separate course" (Batarelo et al., 2010, 17). After that, the public debate focused on the inclusion of EDC content as an "integrative part of all teaching courses", and the inclusion of EDC content "as an integral part of a course" that would be called "civic education" (Batarelo et al., 2010, 17). However, it should be emphasized that EDC includes elements of CE, but it is a broader, so-called the "umbrella concept", which includes many areas ("civic education, political literacy, education for peace, education for the environment, education for human rights and education for community life"), and gives special attention to different types of formal and informal education in the context of lifelong learning (Dürr, Spajić Vrkaš and Ferreira Martins, 2002, 28-29). Furthermore, EDC includes a number of "concepts/values", among which some of the most important are: "human rights and freedoms", "democracy", "civil society", "globalization" and "development (sustainable changes)", as well as the development of various "socially important skills" and competencies such as "adherence to the principle of sustainable human development understood in terms of a balance between social development, environmental preservation and economic growth" (Dürr et al., 2002, 84-86). Nevertheless, although the process of introducing CE in Croatia is still ongoing, during this long period significant progress has been made, and scientific research and professional literature on these topics become more and more numerous. Therefore, we will present a brief definition of "citizen competences" that are key to understanding the importance of environmental literacy, and then we will highlight some data on the outcomes of their implementation in this context. According to the Civic Education Curriculum (CEC) from 2012, environmental literacy is an integral part of "civic knowledge" and their understanding, which should be developed through "civic competences" (Spajić-Vrkaš, 2015). Namely, by the term "civic competences" CEC means "a special type of knowledge, skills, attitudes, values and behavior, which ensure the successful fulfillment of a civic role for an individual", and which are developed "generally through school and extracurricular activities and, in particular, through civic education" (Spajić-Vrkaš, 2015, 28). According to that CEC, civic competences are divided into "functional and structural dimensions", whereby "the functional dimension" consists of "civic knowledge and understanding, civic skills and abilities, civic values and attitudes", while the structural dimension consists of the following six components: "human-legal", "political", "social", "(inter)cultural", "economic" and "ecological" (Spajić-Vrkaš, 2015, 28-29).

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<sup>1</sup> For this purpose, two manuals for the elementary school were created: within the manual for the 5th and 6th grades, the terms "ecology and sustainable development", as well as separating and sorting waste are discussed (Golub, 2017, 62-65); within the manual for the 7th and 8th grade, the terms "sustainable development, environmental protection and responsible waste disposal" are discussed, as well as "green entrepreneurship" and "socially responsible business" etc. (Golub, Pašić, 2018, 26-35).

In that same CEC, the “ecological component” refers to “promotion of sustainable development, rational and responsible use of natural resources at all levels, understanding of global interdependence in the preservation of the planet and adherence to a holistic approach to sustainable development” (Spajić-Vrkaš, 2015, 29). In the following, we will highlight some conclusions of the “Unified report on the effects of the experimental implementation of the Civic Education Curriculum in 12 elementary and secondary schools” during 2012/2013. (Spajić-Vrkaš, 2015, 18). Namely, the outcomes of CEC were not achieved as an integral whole of all components, but the teachers emphasized and processed some components in their teaching work, for example “(inter)cultural and ecological”, and some such as political and human-legal “more or less neglected” (Spajić-Vrkaš, 2015, 239). This is confirmed by the data according to which 57% of the teachers estimated that they had achieved “a lot” and “very much” for the “degree of achievement of outcomes” in the environmental component, while 19% of them believed that they did not achieve them at all, or “a little” (Spajić-Vrkaš, 2015, 197). In addition, below we will highlight some conclusions of the research entitled “Democracy and human rights in primary schools: theory and practice” from 2009, conducted with the aim of examining “the methods and effects of implementing education for democratic citizenship in primary schools at the national level” (Batarello et al., 2010, 17). Namely, Batarello et al. (2010, 39) conclude that textbooks “insufficiently promote civic activism and action for the common good (local community, school)”. In addition, according to the results of the survey part of that research, teachers, parents and school principals consider EDC as “one of the most important tasks of primary education”, as well as that these contents “are not sufficiently represented in primary schools”, and that they should be “started as early as possible in the educational system” (Batarello et al., 2010, 95). Furthermore, the researchers concluded that the “contents of education for democratic citizenship” are implemented, but in a “sporadic and optional way”, depending on the affinities and personal engagement of “individual teachers and/ or principals” (Batarello et al., 2010, 95). The conclusions of the research on the attitudes of the student population towards “education for sustainable development”, conducted in 2010 (N=1001) and 2016 (N=1347) on a representative sample of students at the University of Rijeka, are similar (Buzov et al., 2020, 16). Namely, “education for sustainable development” in Croatia is not implemented systematically, but depends on “motivation and training”, as well as the personal engagement of the teachers themselves (Buzov et al., 2020, 16). This is confirmed by the data of the research conducted in 2016, according to which “70% of students estimated that in the previous, lower levels of education, young people do not acquire enough knowledge about sustainable development” (Buzov et al., 2020, 16). In addition, in the same survey, “53.7% of students” stated that “they did not listen to and process topics from the field of sustainable development during their studies” (Buzov et al., 2020, 9). Therefore, based on both conducted studies, researchers conclude about the “need to include sustainable development content in higher education programs” (Buzov et al., 2020, 16), as well as at other (“lower”) levels of education.

#### **4. CONCLUSION**

As a concluding remarks of this paper, the importance and need of systematic implementation of CE through educational system (as well as implementation of the EDC at different educational levels) can be highlighted again, so that young people within formal education can acquire and develop civic and environmental literacy. In this regard, it is necessary to systematically implement content related to sustainable development and green jobs at all educational levels. Developed environmental literacy is one of the prerequisites for creating and performance of green jobs, as well as general action in the direction of developing a green society in the future, which is a term used to describe “a desirable and as yet unrealized society of environmentally conscious individuals” (Cifrić, 2012, 406).

In this regard, formal education should implement programmes which educate about sustainability, and enable pupils and students “to reach their academic and professional potential via three key actions“ in order to prepare them for future green jobs: (1) knowledge enhancement (includes environmental sustainability and learning about green workforce and economy); (2) skills and competency development (teaching and learning about the competencies and skills required for green jobs) and (3) job opportunities (strengthening ties between potential employers, educators and students) (UN, 2021, 14). The transition to a green economy can be an opportunity to overcome economic and environmental crises and risks resulting from an irresponsible attitude towards the environment and people. Transitional measures and policies on the transition to a green economy are aimed at sustainable and inclusive growth, efficient and responsible use of natural resources, and environmental impact. The transition from a market-based to a green economy, although it requires significant financial investments in infrastructure, is presented in all strategic documents of international organizations and the European Union as an opportunity for additional employment by creating new jobs, especially for young people who are a particularly vulnerable group on the labor market. At the global level, employment will increase and about 18 million new jobs will be created by 2030 as a result of investments in green sectors and changes in production (ILO, 2019; 2022). However, increasing employment through employment in green jobs requires the inclusion of new young workers who have the necessary knowledge and skills to perform green jobs and manage green business processes. Green jobs include new and existing jobs that reduce the impact on the environment, and young people who, compared to older generations, are more aware of the consequences of climate change, are the most suitable for performing jobs that contribute to environmental sustainability. Their environmental awareness and responsibility towards the environment and more modern education and knowledge of technology are good prerequisites for green business and the transition to a green economy. The expected benefits of the green economy in the form of increasing youth employment and reducing poverty and the impact on the environment need a stimulating political environment and appropriate development and educational policies that will enable the acquisition of the necessary competencies and measures for employment and entrepreneurship that achieve green growth. The potential for the development of green jobs for young people in more developed societies is predicted in the ICT sector, the construction industry (e.g. green housing), the service sector and the production of green products (e.g. solar panels, electric cars...) while the changes and increase in youth employment in sustainable agriculture is more associated with the poor countries of Africa and Asia. However, despite the perceived positive reasons for the transition to a green economy, changes are slow and marginal. A complete change to a green and sustainable economy is questionable without political and institutional support for economic and social change. Despite the increasing public awareness of the impact of climate change and increasingly massive environmental movements globally, demands for a transition to a sustainable green society and economy are still marginally represented and implemented. The transition to a sustainable green economy is not possible without abandoning the logic of capitalism and the fundamental capitalist ideas about the competitive market, so solutions for current environmental issues and problems still should be found within the existing social framework (Prothero and Fitchett, 2000, 51).

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## INFLUENCER MARKETING IN TOURISM: AN OVERVIEW AND RESEARCH AGENDA

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### **ABSTRACT**

*Development of information technology which has taken place during past 30 years has brought unprecedented changes to human communication and interaction. There is hardly an area of human activity which has been left unaffected, and some of the most profound changes have happened in consumer markets, both in terms of conducting business and in terms of individual social interactions. Individuals gained the ability to communicate with a wider reach than ever before. Information has become easily and instantaneously available thus increasing both the transparency of markets and the negotiating power of individual consumers. Development of the web technologies, and Web 2.0 in particular, was followed by the rise of various services which were initially based on the web. Among these services, social media were perhaps one of the most impactful ones in terms of market relations between consumers and companies. The rise of an independent individual as a content creator with high potential to influence other individuals brought about the concept of social media influencer. These changes have introduced significant challenges for businesses due to the loss of control of narrative about products services and organization in general. Tourism was not left aside from these changes and challenges. This paper provides an overview of recent research related to the role of influencer marketing in tourism with a focus on most significant determinants of influencer marketing effectiveness. Furthermore, potentially fruitful avenues of scientific inquiry have been identified and elaborated.*

**Keywords:** *Influencer marketing, Tourism, Digital marketing*

### **1. INTRODUCTION**

Wide use of information technologies in everyday life has led to radical changes in the amount and availability of information consumers are exposed to, as well as in the ways in which this information is exchanged. Internet and services based on the Internet made geographical and temporal distances practically irrelevant when distribution of information is concerned. Tuten and Solomon (2013) speak of the Horizontal Revolution - formerly dominant one-way communication between the organization and consumer is today a dynamic exchange of information between all the stakeholders involved. Ability of users to get involved in content creation and sharing, facilitated by the advances in information technology, laid the foundation for significant changes in ways information in general is being created, shared and consumed. One of the major drivers of these changes has been the advent of Social media. Defined as a group of applications based on the "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content" (UGC) (Kaplan and Haenlein 2010, p. 61), or "online sources of information created, initiated, shared and used by users themselves with the intention of educating each other about products, brands, services, personalities and problems" (Mangold and Filds, 2009 , p. 358), social media has become a space in which consumers channel their experiences, knowledge and dilemmas from everyday life, integrating information and discussions on products and business organizations. The rise of this new platform, which provided consumers with novel ways to express themselves, has also led to certain fundamental changes in the dynamics of consumer behaviour when selecting products. Namely, traditional

models view the process of selection between alternatives as a funnel. According to such a conceptualization, the consumer starts from a relatively wide alternative set which is determined by personal experiences and marketing efforts of companies who provide the alternatives considered. This initial set is then narrowed through the selection process which then leads to the final choice, followed by post purchase behaviour. However, such a linear view of the decision making process has recently been brought under scrutiny. McKinsey and Forrester consultancies have voiced their criticisms of funnel model and provided their own, fairly similar, alternative models. Court et al. (2009) propose new four-phase Consumer Decision Journey process. Phases into which this process is divided are: initial consideration, active evaluation, purchase and post-purchase experience. According to this model, after a stimulus initiates consideration and activates the recalled set of products and brands in consumer's mind, active evaluation phase follows. However, in contrast to the traditional model, during the active evaluation phase, the number of options considered are expanded instead of reduced. One of the factors which the authors point out as a cause of such a change compared to the traditional funnel model is the availability of information on products and services from a wide range of sources – both commercial (companies) and non-commercial (other consumers). Furthermore, the period after the purchase is seen as potentially valuable in retaining customers and attracting the new ones. Specifically, it is shown that two-thirds of consumer touch-points during the consumer decision journey occur during the active evaluation phase and include activities initiated by the consumer and directed at various forms of content created by consumers themselves. Since the post-purchase period is the time during which consumers create a significant portion of the content (e.g. recommendations, criticisms, comments, etc.), monitoring and responding to it becomes a necessity. A very similar circular process is also proposed by Noble, et al. (2010). Overall, new models provide additional insight into the outstanding significance that the content created by consumers has on their behaviour. Namely, with the exception of the purchase itself, the content created by consumers has a role at all stages of the process, either as an element that affects the evaluation of various offers, or as an outcome of the purchase and consumption of the product (in the post-purchase phase). Therefore, it is clear that understanding the development, the way in which it is experienced and the inclination to participate in the development of the user generated content is extremely important in contemporary business in general and tourism in particular. In order to discuss the influence that the user-generated content has on the behaviour of consumers in tourism, it is important to understand the broader context, that is, the specific characteristics of the tourism offers and the challenges facing consumer due to those characteristics.

## **2. TOURISM AND INFLUENCER MARKETING**

Although there are numerous definitions of tourism, for the purposes of this paper, the definition by Cooper et al. (2005, p. 13), viewing tourism as "*activities of individuals travelling and staying in places outside their usual place of residence, for periods not longer than one year, for the purposes of rest and fun, work or for other purposes*" is adopted. Dominant source of value in tourism are various forms of services (accommodation services, and food and drink) aimed at satisfying tourist's needs. Similar to other services, in tourism intangible elements are primary source of value for consumer. This leads to more complex process of evaluation of alternatives and offers as well as a higher degree of perceived risks linked to service consumption (Lovelock and Wirtz, 2011). Higher involvement in information search aimed at reducing perceived risk is a feature of consumer behaviour not specifically tied to services, and it will be more prominent when there are higher perceived risks involved. As it has already been noted, intangible nature of the service offerings inherently ties them to higher perceived purchase risks. Additionally, services differ based on the extent in which it is easy (or not) to evaluate their characteristics and value proposition prior, and sometimes even during and after

use. Depending on the degree to which it is possible to evaluate an offering prior to purchasing or experiencing its delivery, characteristics of products can be categorised into search, experience and credence attributes. Search attributes are aspects of services, which can be evaluated before purchase, hence being the least perceived risk contributing ones. On the other hand, experience attributes can only be evaluated after purchase and use (e.g. the actual quality of service provided in a hotel or a restaurant). Finally credence attributes cannot be evaluated immediately after purchase and use. Rather, there must be trust in the quality of the purchased service on those attributes (e.g. trust that food has been prepared with fresh ingredients). Therefore, the ability to estimate the value provided by a services is the lowest for services high in credence attributes. As for experience attributes based services, their evaluation is tied to going through the service process thus they are also linked with high perceived risks, albeit somewhat lower than the credence attribute based offerings. Tourist services can be classified as highly experiential in most cases. As discussed above, deciding on the purchase of such products is, as a rule, associated with a higher degree of perceived risk due to the limited capabilities of evaluating the offer before the purchase itself. Therefore, consumers seek to reduce or remove perceived risks through collecting information related to the product (Jacoby, et., 1994). When it comes to predominantly experiential products, consumers perceive personal sources as the most trustworthy (Mittra, Reiss and Capella, 1999). Combined with ubiquitous usage of information technology by modern consumers, this tendency towards personal sources of information raises the question of the potential role and applicability of influencer marketing in tourism promotion. While research on influencers and influencer marketing in general has been thriving - a search using Web of Science's Core Collection as reference, for papers published during past 10 years on the topic of 'influencer marketing', and filters out publications aimed primarily at business and management relevant topics and fields, results in 675 publications (Figure 1).

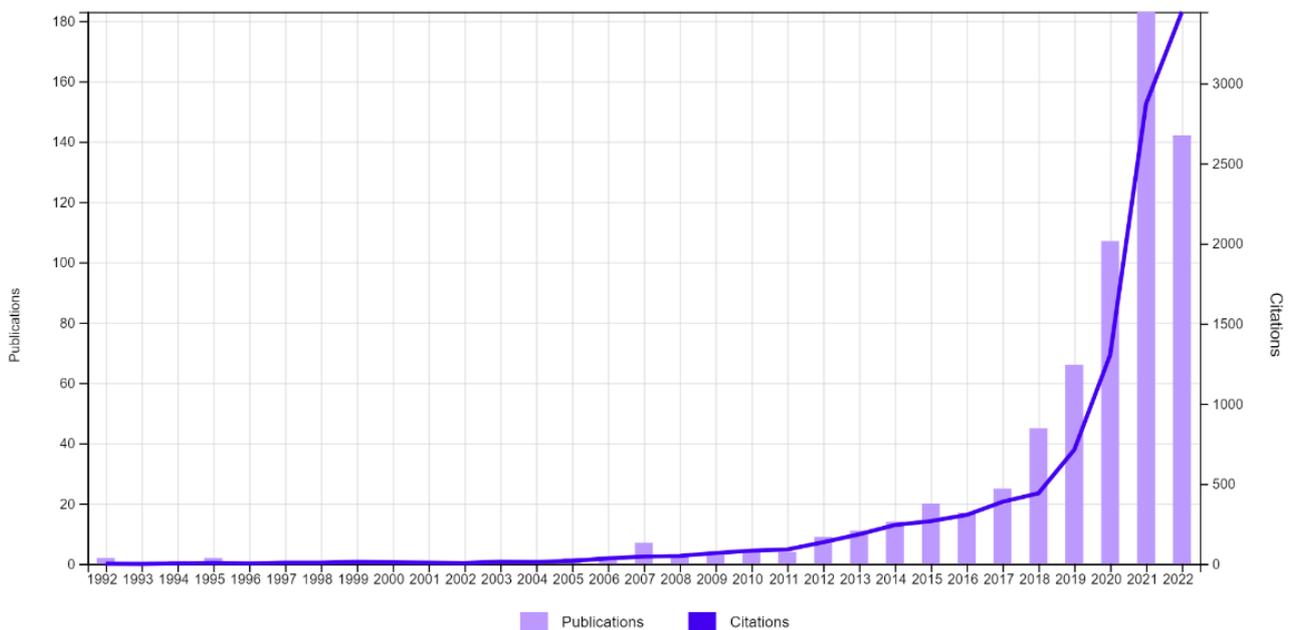


Figure 1: Times Cited and Publications Over Time – keywords 'Influencer marketing' (Topic). Additionally filtered for business-oriented publications.  
(Source: <https://www.webofscience.com>, acc)

However, if 'tourism' is added as a search term, that number is reduced to 42 publications, with research activity intensifying only during past few years (Figure 2). These numbers reflect the interest and relevance of the influencer marketing as a topic in general, as well as a slight lag

in realising its importance and potential in tourism, as reflected by the amount of research dedicated to its application in the tourism context.

Due to idiosyncrasies of tourist services, additional research in this field is not only welcome, it is necessary.

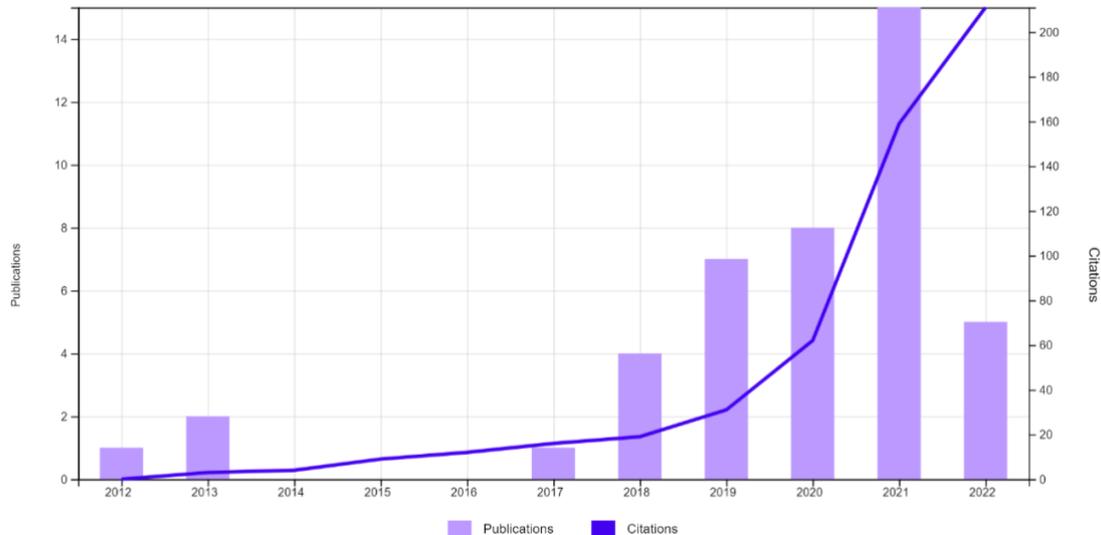


Figure 2: Times Cited and Publications Over Time – keywords 'Influencer marketing' (Topic) and 'Tourism' (Topic). Additionally filtered for business-oriented publications.  
(Source: <https://www.webofscience.com>)

Social media influencers can be defined as 'a new type of independent third-party endorser who shapes audience attitudes through blogs, tweets, and the use of other social media' (Freberg et al., 2011, p. 90). Influencers have a special place in promotional activities. On one hand, they can be considered opinion leaders in digital context, with opinion leadership defined as the ability to exert significant influence on one's attitudes, behaviours and decision-making (Gholamhosseinzadeh et al. 2021). On the other, a significant portion of them are 'ordinary' people who – through their activity on social networks and specialised knowledge and interests became relevant sources of information in the eyes of other social platform users. Thus, followers are more likely to feel relatedness and perceive Influencer provided content as being more honest, or at least more objective in comparison to the content provider by commercial entities - accommodation providers, restaurants, destination management organisations etc. The extent of their influence varies from industry to industry, however, it should not be underestimated. A study by Berger and Keller Fay Group (2016) revealed that as many as 82% of consumers stated they would buy products recommended by an influencer, while travellers use social networks (and in extension are likely to be exposed to influencer content) at each stage of a travel experience (Kladou and Mavragani, 2015). Fermentia-Serra et al. (2022) provided an overview of studies looking at major uses for influencer marketing in tourism. Among other, they identified repositioning or building the image of a destination or specific tourism services company, promoting places of interest, drawing specific market segments through awareness building, and maintaining or increasing visit intention as main potential applications. Furthermore, they note the increased professionalization of the influencer marketing activities due to introduction of professional mediators (agents and agencies) in the hiring process. The role of intermediaries is also echoed by Stoldt et al. (2019) who note the increased structuring of the relationship between influencers and destination management organizations facilitated by the intermediation, improved brand value due to better fit between influencer and the promoted destination and reduced risks inherent to unsupervised communication on the social media.

These studies clearly indicate strategic value of influencer marketing and a shift from influencer marketing being an individual incentive towards building of a professional industry. Determinants of influencer's effect on its audiences have been grouped into three major groups of variables – namely influencer, content and consumer characteristics. These characteristics have further been broken down into influencer types, perceived expertise and credibility, physical and social attractiveness, number of followers, number of likes, and the perceived homophily. Empirical research of these determinants has shown that perceived originality and uniqueness of the content are some of the most important elements when determining the impact of content on the behavioural intentions of consumers. Along these lines, Seçilmiş et al. (2021) show that perceived attractiveness of the content shared by the influencers, combined with perceived expertise of the influencer impacts visit intentions of individuals exposed to such content. Ye and Tussyadiah (2011) have shown that different visual content carries different meaning for potential visitors, depending on their experience expectations. Hence, when using influencer marketing there should be additional effort put toward achieving coordination between influencer image, target group and types of materials used in promotion in order to maximise the effect of the promotional effort. Additionally, fit between published content, influencer positioning and individual characteristics of the target audience (i.e. follower-brand fit) is also important for the effectiveness of the shared content (Casaló et al., 2020; Leung et al. 2022). In particular, when there is high congruence between consumer's self image and perceived image of an influencer, consumers tend to express higher behavioural intentions toward promoted content (i.e. intentions to visit destination promoted by an influencer) (Xu and Pratt, 2018). Interestingly Kapoor et al. (2021) show that, in the case of eco-friendly hotels, objectivity and rationality in the content shared by the influencers results in improved perceptions of destination's commitment to sustainability as well as positive behavioural intentions (in terms of patronage). Hence the question arises whether, on top creative aspects of the content created there are certain types of users reacting better to, or types of offers which can specifically benefit from certain types of content (namely rational vs emotion based). Finally, frequency of posts, positivity and including links to brands have also shown to be relevant for improving effectiveness in achieving marketing goals using influencer marketing. A framework potentially useful for understanding the effectiveness of content shared through social networks is social groups framework. Namely, Instagram content creators and their followers could be viewed as members of the same social 'group'. In this context, applying findings from Thomas and Vinuales' (2017) work on social influence, content coming from an in-group member (in this case, influencer followed by an individual) would likely spark higher levels of curiosity and increased behavioural intentions than the content coming from out-of-group sources. Thus, it could be argued that influencers with higher level of dedicated followers will have better effectiveness in developing interest among target groups. This means that even micro influencers can be highly effective promotional vessels if their followers are identifying with the influencer, a notion reflected in findings by Kapoor et al. (2021) as well. However, there are also some limitations to influencer's effect on the consumer which stem from the previously discussed nature of their relationship. These limitations are related to consumer perceived motivation behind influencer's posts. Martinez-Lopez et al. (2020) have shown that the effectiveness of the content is impacted when consumers perceive it to be motivated by compensation received by the company or organisation behind the product or service the content is focusing on. Consumers expect the influencer to act without hidden (commercial) agenda and to keep his posts honest and based on personal opinions. When consumers perceive the content as driven by commercial interest, even when there is no such link indicated (e.g. influencer does not indicate post as sponsored or emphasizes that a product or service has been provided for promotional purposes), both the trust in the influencer and well as the credibility of the message will be reduced.

### 3. CONCLUSION

Online influencer marketing has experienced significant changes since its emergence. Arising from a combination of technology-empowered creative individuals and major social platforms attention-based algorithms, influencers evolved from a technology driven social phenomena to an established multi-billion global industry in the marketing domain. In this paper, an overview of major determinants of influencer marketing effectiveness in tourism was provided, with particular attention given to mechanisms behind influencer-follower interaction. Beyond providing insights into the dynamics of relationships formed between influencers and their followers, and determinants of the effectiveness of that relationship in marketing context, some areas for future research can be clearly identified. They will be briefly discussed in turn. While there is extensive research on the impact of social media influencers on consumption behaviors of the Millennials and generation Z, there is a significant gap in the literature regarding the older generation cohorts who still might be avid users of technology. This is particularly true when talking about the generation X who have effectively been the first generation exposed to personal computers on a wider scale and the first generation to adopt many of the technologies considered 'normal' today (mobile and smartphones, social network platforms etc.). Members of this generation are now in their prime years in terms of spending power, and – while not a dominant cohort of social media users, they are far from light or non-users. Data shows significant usage of Facebook and Youtube by gen X cohort in the US (70 and 76% of interviewed gen X's, respectively), with Instagram usage being on the rise (47%) (Statista, 2021). Hence it would be interesting to see to what extent the findings related to behavior of digital-native generations when influencers are concerned apply to members of the generation X. Another potential area of research which arises from the previous discussion relates to the extent to which the influence from an individual social media influencer propagates 'down' the social network. While majority of studies deal with the 'first-line' followers, the question is to what extent effects observed with dedicated audiences (followers) extend onto additional audiences – people exposed to SMI content due to their links with followers. Such research would provide an insight into the value of influencers, which could go beyond the common, direct metrics (follower numbers and engagement), based approaches. Finally, whereas a lot of attention in previous studies was focused on the individual characteristics of the influencer as the source of information, and their impact on consumer behaviour and behavioural intentions, there are questions related to structure of the shared content which might be suitable for further investigation. One of those relates to the content shared – namely, the effectiveness of different combinations of visual and textual content in inciting reactions from target audiences. As Sojka and Giese (2006) have shown, individuals vary based on the type of processing they employ when faced with outside information (affect / cognition combinations) and their processing type determines the effectiveness of different stimuli, with visual stimuli being more effective in case of affective processor type individuals. What type of processing is dominant when tourism related information is concerned, whether there are specific markets and types of offerings which are more suited for certain combinations of affect and cognition based processing, are just some of the questions which might prove to be interesting routes of research for the future of influencer marketing in tourism.

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## THE ROLE OF WOMEN AS PURCHASE DECISION MAKERS IN THE FAMILY

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### ABSTRACT

*The family as a social unit significantly influences the behaviour of all individuals within it, as well as the behaviour of individuals as consumers. When observing consumer behaviour, the influence of family is viewed through two aspects: its influence on the personal characteristics, attitudes, values, and other characteristics of an individual, and its influence on the consumer purchasing process. Households can influence consumers either directly or indirectly. They could be intermediaries between larger social systems and indirectly influence the formation of thought processes, consumer desires, attitudes, and motivations. The family directly influences certain stages of the purchasing process, as well as on purchase of the product itself. The most important role of family is raising children. As mediators in the transferring of social value, families have an important societal position. The most significant changes that have happened within families are the changing traditional roles of women in families and households. The role of women in contemporary times has become increasingly important when compared to the past. »Modern women« build their own careers, but they also want their opinions and decisions to be respected, and they are also active decision-makers in their family circle. Therefore, the goal of this study to determine the role of women as decision-makers in the family, with an emphasis on the purchase decisions.*

**Keywords:** *consumer behaviour, purchase decision-making, family, the role of women*

### 1. INTRODUCTION

The family is the fundamental social unit with three functions: biological, economic, and psycho-social. The biological function of the family is mainly seen in reproduction, while its economic functions are seen in job acquisition and distribution, as well as in distributing income. Therefore, the focus of the family's economic function is mainly on purchasing and using household items (furniture and the complete adaptation of the house or apartment, home appliances, joint meal preparation, cars, etc.), where it is important to mention that the family, as well as members within the family, are frequently observed in scientific literature as the most important influencing factors on purchasing decisions (Brown, 1979; Assael, 1998; O'Malley and Prothero, 2007.; Hamilton, 2009). The psycho-social function of the family is seen in its influence on the development of collective consciousness, values, beliefs, and the foundations of understanding. Other than influencing the formation of someone's basic beliefs and values, the family also offers to its members love, respect, and friendship (Kesić, 1999). From a consumer's perspective, a household is different from the larger social system in a multitude of ways which are important for understanding the role of households in determining consumer behaviour.

The family is distinct from other social groups in a few key characteristics:

- 1) Family is a unit which creates and spends at the same time.
- 2) A family expresses the common needs of all members and the individual needs of each member,
- 3) The family is a part of the greater society- there exists an intermediary role between the system and the individual - norms, customs, values, and historic legacy of the larger social system can only reach an individual through the family filter.
- 4) The influence of family on the ideological structure and the way of life of an individual is very significant. Incentives such as acquisitions, achievements, and cooperation are mostly generated under the family influence.
- 5) Family interactions form behavioural norms which are usually conformed to by family members. The family is very influential on personal role formation, not only within the family, but also outside of it.
- 6) For most family members, it is an important reference group for forming their own viewpoints and values. Life standards, lifestyle, and other family characteristics define the key personality traits of its members (Kesić (1999, 80)

The three basic functions which are carried out by households are extremely important for the discussion on consumer behaviour. These functions involve financial prosperity, emotional support, and a certain way of life. During the last 25 years, how families delegate responsibilities in regard to financial prosperity has significantly changed. The traditional role of men as procurers of economic goods, and women as housewives who raise children no longer applies. The economic role of children has also changed. Parents often communicate with their children on what to buy, when to buy, how much to buy, and what to eat. (Kesić, 2006). Today, even though many teenagers are employed, they rarely financially support their families. Instead, teenagers are expected to pay with their own money their trips and nights out, while other young people are financially participating in paying their tuitions, which is what will prepare them later for financial independence. Offering emotional food or support (involving love, affection, or intimacy) to family members is a key function of the modern family. To fulfil those functions, families offer support and encouragement to their members and their help in decision-making and solving personal and social problems. Education, experience, and personal and common goals of spouses is what determines their interest in education or career, reading, watching television, learning to use computers, the frequency, and quality of dining out, and the choice of other fun recreational activities. Researchers have recognised the capricious nature of family unity. In the past, being together meant doing the same things together, and today it means that despite being in the same family, everyone works their own job. Family life obligations, together with the time factor, strongly affect consumption patterns. (Schiffman, Lazar Kanuk, 2004).

## **2. DECISION MAKING IN THE FAMILY**

Household purchasing decisions differ depending on the stage of the household life cycle, specific products and environmental conditions. Based on the initially set conditions, marketers need information about which members are involved in the purchase process, what are their motives and interests, and to design a marketing strategy they need information about what satisfies, needs and expectations of each relevant family member. Therefore, it is necessary to know consumer skills, consumption-oriented preferences and consumption-oriented attitudes (Krobot, 2019). Within the family, consumption can be classified according to: consumption of an individual member, consumption of the family as a whole and consumption of the household unit (Sheth, 1974).

Furthermore, Sheth (1974) divides family purchasing decisions into two types; when it is done independently by one member or when it is done together by several or all family members. Family decision-making is much more complex than individual decision-making. Family decision-making is distinguished by three main determinants, namely: the possibility of joint decision-making, the division of roles among family members in decision-making and the need to resolve conflicts. Joint decisions are important for the whole family, including making purchase decisions, which also represents a joint activity (Lackman and Lanasa, 1993; Burns, 1992; Su et al., 2003). In order to make a joint decision, family members consider different options. However, the aforementioned joint decision-making mostly occurs with high-involvement products, based on the assumption that for low-involvement products there is a common buying behavior that does not require joint decision-making (Williams and Burns, 2000). But if you analyze products with high involvement, you can notice that family members often have different opinions about the purchased product. When making such a decision, we are faced with three main reasons: the risk of making the wrong purchase, the importance of the outcome for the whole family and the available time. If the decision concerns all family members, a joint decision will be made to reduce the risk of wrong purchases. It also reduces the uncertainty of members if they are not sure what other family members will say when choosing a particular product or service. Although joint decision-making reduces the perception of the risk of error, in practice the well-known phenomenon of dispersion of responsibility often occurs, as a result of which families decide on things that some of them would not agree to on their own (Milas, 2007). Research by Lackman and Lanasa (1993) argues that researchers must determine the processes that lead to the allocation of different roles and how these different roles within the family interact with each other. With this in mind, five roles were determined in which certain family members can be found in the purchase process, namely: initiator, influential member, decision maker, buyer and user. Initiators are those who have a clear idea of what is best, they already know in advance which product and brand is best for them, and they create pressure to satisfy a certain need. Influential members are the ones who, in most cases, make the final decision to buy the product, and do not endorse or support the sponsor. It is important to conclude that the mentioned roles are not static, but can change over time (Su et al., 2003; Belch and Willis, 2001). The role of decision maker is usually played by the parents in the family. They are the ones who have the money and decide whether to buy the product or not. In addition, decisions can be made at a level where the whole family decides together. The customer's role is to recognize the need for the product, go to the point of sale or on the Internet, choose the desired product that matches his needs and wishes and buy it without hesitation. Finally, the role of the user is to use the product for its intended purpose (Grbac, Lončarić, 2010). Each family has a different role. The most common division of roles is that men decide to buy cars, various technical products and items related to certain physical activities. On the other hand, women play the most important role in buying household items, cosmetics and necessities for children. Chaudhary and Gupta, (2012) state that from 1940-1950 children were not considered stakeholders in the purchase, but today, with the influence of television and the Internet, children have become experienced consumers and have purchasing power for almost every product category. This is evidenced by research that shows that children consider their influence greater than that of their parents and consider their role more important than that of their parents (Nanda et al., 2007). Therefore, children today are considered full actors in making family decisions, especially when clothes, cosmetics and technical products are bought for them. All these decisions primarily depend on the financial resources that each family has, but also on how individuals have grown up and how they cooperate with each other. Of course, households with higher incomes will make purchasing decisions more easily than households with lower incomes, but on the other hand, probably households with lower incomes have better relationships and respect, so they better accept the other party's opinions (Frinčić, 2019).

Family members may have different opinions during the purchase process, so previous research on this topic also analyzed constructs such as family power, participation and family conflict during the purchase (Qualls and Jaffee, 1992). Conflict develops when those involved in the purchasing process do not have the same preferences and attitudes toward the product being purchased. The conflict escalated for several reasons. Some of the reasons are that family members involved in the buying process simply do not see the need to buy a particular product, have different preferences for product brands, etc. In order to avoid conflict, three strategies are agreed upon in reconciliation, namely: problem solving, assigning roles and budget allocation. Problem-solving strategies attempt to resolve disagreements among members through the main characteristics of the family. If they do not have the same understanding of the characteristics of the product they are buying, the decision is usually made by the person who knows the area best in order to arrive at the best solution. If there are two products for which the member cannot decide, in order to solve the problem, he can decide to buy two products by agreement. Conflict is most easily resolved if the family clearly recognizes that one member is the most authoritative or most interested person in the area. At the same time, more understanding and tolerance of one of the members and the delegation of the role help to solve the problem, and the division of the budget means an independent decision of individual family members (Milas, 2007).

### **3. INFLUENCE OF WOMEN IN THE FAMILY ON THE BUYING PROCESS**

Family or household shopping is a joint decision-making process on the purchase of a particular product. Each member of the family has a certain role in the shopping process and possesses certain information and knowledge. This effect also depends on the individual's interest in the product and his income. Although many service providers see the family as the basic decision-making unit, they typically examine the attitudes and behavior of only one family member whom they consider to be the primary decision maker. In some cases, they also explore the attitudes and behaviors of those who are most likely to be the primary users of the product or service. By taking into account possible users and possible customers, providers can get a richer picture of the consumption process (Schiffman, Lazar Kanuk, 2004). Therefore, it is necessary to analyze the influence of individual members of the family on the purchase process, or more precisely, what is the influence of spouses (husband and wife), because it was previously established that the influence of gender is an important factor, although today there is a decline in gender differences and a weakening of gender identification, which led to the dilution of the focus on gender in the family (Qualls, 1982, 1987; Commuri and Gentry, 2005; Piron, 2002; Mano-Negrin and Katz, 2003). It will also be shown what influence their children have on decision-making in the shopping process. The older the child is, the greater the role he plays in the purchase because he is more equal to his parents, more precisely he is getting an education and starting to earn his own money (Milas, 2007). Husband and wife have the greatest influence on family decisions. The relative size of the husband's or wife's influence depends on several factors, namely: the type of product, the stage of decision-making and the characteristics of the family. When we talk about types of products, throughout history stereotypes have been created about "men's" and "women's" products, that is, what men and women buy. What was confirmed by previous research, for example, the husband was usually responsible for the purchase of technical products, while the wife was dominant for repeated purchases of non-durable products (Blood and Wolfe, 1960; Burger and Locke, 1960; Sproles and Kendall, 1986. ; Wolgast, 1958). More recent research has also confirmed that men usually make the decisive purchase decision for a car, household appliances, tools, etc., while women mainly buy household items, food, etc. Joint decisions in a large number of cases refer to the purchase of products that have a common purpose, i.e. use, such as furniture. Depending on the type of product, the roles of the wife and husband are different.

For the products of the one spouse who has a better understanding or shows a greater interest regardless of the stereotype, that person will have a greater influence on the purchase process, from information gathering to the actual purchase of a particular product. Family characteristics in this case include the education and income of the spouse, and for this reason those with higher incomes will have more influence because they have greater purchasing power (Rančić, 2017). The most significant changes took place in changing the traditional roles of women in the family or household. Thus, Herbst (1952) found an increasing number of changing roles of spouses, with more women entering the workforce while husbands began to take on greater roles in the household (Wut and Chou, 2009; Xia et al., 2006). With 50% of women working full time, their traditional roles as wives, mothers and housewives in the family have changed significantly. By changing the roles of women, there were necessary changes in the roles of men in the family. In the US, more than 50 percent of men and women prefer a marriage in which household responsibilities are shared, while 38 percent of women and 38 percent of men prefer a traditional marriage, according to a survey on the topic. Women belonging to the feminist class are more educated and optimistic about life, work and finances. They also accept risk and are interested in their image and self-confidence in society. While the segment of modern women is growing, marketers must not forget the segment of traditional women. They are oriented towards the family and obligations within the family. Working women represent a particularly interesting segment for marketing experts. Today, women make up 45 percent of the workforce. In the labor force, the share of young mothers with children younger than 3 is even higher than the average of employed women. An important observation for marketers focuses on the behavior of working women during the shopping process. Research shows that there are huge differences in the behavior of these specific groups of women. Employed women are more influenced by promotional messages in the categories of cigarettes, household appliances, personal hygiene products, products of animal origin, detergents, soaps and other household products. The segment is also specific in that it buys more and uses all household products that are designed to save time (Kesić, 2006).

#### **4. RESEARCH METHODOLOGY AND RESULTS**

In order to present the roles of family members in making a purchase decision, the following research was conducted. The mentioned facts will be investigated and presented with the help of a survey questionnaire. The survey questionnaire was created using the Google Forms tool. The aim of the survey questionnaire is to investigate and determine whether individuals shop with family members, what is the family's influence on the individual's purchase decision for a specific product, which products do they need help or advice with, and which family member is more responsible or responsible for shopping, a particular decision or giving a particular opinion. The focus is on the influence of women on decision-making within the family. The survey was conducted by sharing the survey link on social networks Facebook and Instagram and with the help of mobile messaging applications such as WhatsApp and Viber. The research was conducted on a sample of 136 respondents in the period from October 28, 2022 to November 4, 2022. The data obtained from the survey questionnaire are presented graphically and tabularly. The results of the research are presented in tables, graphs and descriptive form. These sample characteristics are shown in Table 1.

*Table following on the next page*

*Sample characteristics, N = 136*

<b>Age</b>	
-20	47
21-35	59
36-50	10
50-	20
<b>Gender</b>	
Female	95
Male	41
<b>How often do you go shopping?</b>	
One or more times a day	32
Several times a week	58
Once a week	41
Once a month	5

*Table 1: Socio-demographic data of respondents  
 (Source: Autors)*

According to the data from the given table, it is evident that the majority of the sample is younger than 35 years of age. Most of them are women. It is interesting to point out that the majority of respondents stated that they go shopping within the family several times a week, even several times a day. The goal of further research was to determine for what purpose users most often use mobile phones, and through which channels they receive ads on mobile phones. The collected data are presented in the following table.

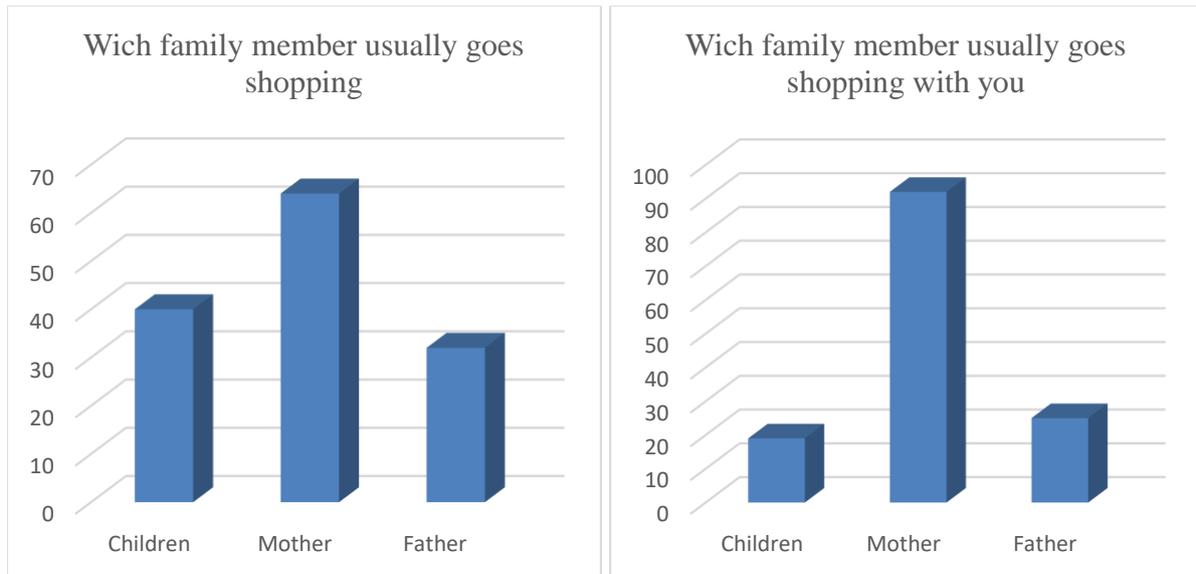
*Sample characteristics, N = 136*

	Yes	No	Sometimes
The opinion of family members is important to me during the period of purchase of a certain product	78	23	35
Do you make a list when you go shopping?	69	27	40
Looking for advice from family members when buying a certain product?	48	22	63
Do you shop with family members?	86	4	45
It is important to me that I buy products that will satisfy me and my family members	107	14	15
It is important to me that my family members participate in providing information about the product I want to buy	70	34	32
It is important to me that after shopping, I and my family members feel the same satisfaction	91	19	26

*Table 2: Analysis of the influence of family members on the purchase decision  
 (Source: Autors)*

From the following table it is clearly visible that the influence of family members is clearly emphasized when rejecting the product. Therefore, further research focused on the question of which members of the family most often go shopping, and which members the respondents take with them. The indicators are given in the following graphs.

*Graph following on the next page*



*Graph 1 : Analysis of which members of the family most often go shopping  
 (Source: Autors)*

Based on the obtained data, it is clearly visible that the mother is a key member of the family when making the purchase decision. In order to further clarify the mentioned problem, we divided the products into several groups and analyzed which family member makes the decision about their purchase. The following indicators were obtained.

	Children	Mother	Father
Household products	21	<b>95</b>	20
Food products	23	<b>98</b>	15
Clothes	28	<b>103</b>	5
Technology	41	30	<b>65</b>
Cosmetic products	62	64	10
Car	26	15	<b>95</b>

*Table 3: Analysis of the influence of a family member on product selection  
 (Source: Autors)*

The goal of the research was to determine whether individuals shop with their family members, and what influence the family has on the individual's purchasing decision. Through the research, it was concluded that to a greater or lesser extent, the opinion of their family members is important to individuals in the shopping process, and that very often each individual goes shopping with his family. To a large extent, the respondents agreed that it is important for them that their family members participate in providing information about the product they intend to buy. The research showed that the mother is the most common member of the family who goes shopping alone or accompanied by an individual member. When buying household products, as well as cars, the help of family members is most needed. When buying household products, food products and clothing, it was determined that the mother's opinion is the most important. When buying technological products and cars, the most important thing is the father's opinion. If there are certain disagreements during the purchase, individuals will resolve the said problem by agreement with their family members.

## 5. CONCLUSION

The family is a basic social unit and consists of three main functions, namely: biological, economic and psychosocial functions. Each family goes through different family life stages, no family is the same, they differ from each other in the position of consumers and there are three basic functions of the family in terms of consumer behavior, and they include financial well-being, emotional support and an appropriate lifestyle. The most common division of roles is that men have an important role when making a decision about buying a car, the role of women is important when making a decision about buying household items, cosmetic products, certain items for children and clothes. There are different roles within the family in making a purchase decision, and decision-making at the family level is much more complicated than decision-making at the individual level. Making joint decisions in the family is very important, but family decision-making differs according to three main determinants, namely: the possibility of joint decision-making, the division of roles among family members in decision-making and the need to resolve conflicts. The very structure of the family changes from day to day, and accordingly there are certain changes in the roles of women and men. The conducted research indicates that to a greater or lesser extent the opinion of family members is important to individuals in the purchasing process and that they very often go shopping together with them. It is very important that the family participates in providing information about what is intended to be purchased, and it is important that the purchase satisfies the needs of the individual as well as the family members themselves. The mother is the most common member of the family who goes shopping, and she is important when buying household products, food and clothing. If there are certain conflicts in the purchase process, individuals and their family members will resolve the problem by agreement.

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## THE IMPACT OF MOBILE MARKETING ON CRM

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### **ABSTRACT**

*There has been a significant shift in consumer behavior in the current digital environment. Becoming aware of this, companies are introducing changes aimed at building consumer relationships and strengthening digital marketing. Businesses strive to win over potential and retain existing customers resulting in the emergence of a concept based on customer relationship management (CRM). In order to strengthen relations with consumers, technology has had a great influence and has enabled communication with consumers and the development of long-term relationships and constant monitoring of their needs. Information technology is important because it allows consumers to save money, time, physical effort, and thus increase the comfort of their use. Social networks and communication among consumers in this environment is gaining increasing importance. The prevalence of sophisticated technology has significantly influenced the importance of e-marketing. Since consumers have their mobile devices with them at all times and in any place, mobile marketing has begun to play an increasing role. The mobility of modern society has influenced the evaluation of consumer relations management and the development of marketing communication via mobile devices, i.e., an ever increasing importance has been given to marketing in CRM via mobile devices (mCRM). The aim of this paper is to show the importance of mobile marketing for business and economic entities in managing consumer relations. In order to prove the former, a sample survey was conducted (N = 122) to determine the impact of mobile marketing on consumer behavior and building relationships with a company.*

**Keywords:** *marketing, mobile marketing, customer relationship management (CRM)*

### **1. INTRODUCTION**

The development of technological innovations is irrevocably changing the market, thereby demanding an ever-increasing presence of electronic media. Specific emphasis is put on the development of mobile devices, which offer to the modern man mobility unseen in other media, i.e., a mobile device allows the users access to information anytime and anywhere. The mobile device user is under the constant barrage of different advertisements which appear on the screen of their mobile device. Because of this, their application is unescapable and has become a ubiquitous need of every user. Mobile devices are beginning to be used in all aspects of human life, including marketing, which resulted in the development of mobile marketing. Mobile technologies have given an opportunity to enterprises to discover and attract potential and retain existing consumers with a modern approach. 21<sup>st</sup> century consumers are more mobile than ever before, and mobile technology is what allows advertising messages to reach users no matter the time and place. The need for the development of a customer relationship management (CRM) model becomes stronger in such an environment. Organisations have to reach potential consumers and draw them with different strategies and prove to them that their product is the one that will fulfil their needs, desires, and expectations.

## **2. MARKETING YESTERDAY, TODAY, TOMORROW**

Marketing in the 21<sup>st</sup> century is seen as a dynamic discipline and is analysed through the application of promotional activities (Dobrinić and Gregurec, 2016). For marketing to leave a lasting impact, it is necessary to constantly adapt the product and service to the everchanging expectations and needs of consumers (Kotler, 1988). Emphasis should be put on satisfying the needs of the consumer, while today's practice establishes profit as the main goal which represents the results of an organisation (Meler i Dukić, 2007). In addition, the goal of marketing is made evident through a definition which stipulates that „marketing is a human activity focused on satisfying needs and desires through the exchange process” (Kotler, 2004: 11). The evaluation of digital technology and the Internet has led to the transformation of the traditional business into an electronic business, and with that traditional forms of marketing have been remade into electronic marketing. The global market based on digital technologies has enabled economic subjects to stand out with their dynamism, flexibility, and adaptability (Ružić, Biloš, Turkalj, 2014). The technological development has only increased the influence of the Internet on consumer and enterprise behaviour, but also its role in shaping marketing activities. Other than forming the material structure of a society, technology also influences how people think. (Kotler et al, 2006). The term e-marketing can mean “applying the Internet and other digital technologies (such as mobile telephony) alongside traditional marketing methods to achieve marketing goals” (Chaffey et al., 2009: 9). New challenges enable innovative business opportunities on the market, but also change how business is conducted (Ružić, 2003). Through e-marketing, consumers are more willing to give feedback, which enables an organisation to immediately change the unsatisfactory parameters of its marketing strategy. In contrast, in offline marketing everything occurs either face-to face or by calling certain telephone numbers, and since consumers are not willing to give their opinions through these methods, enterprises are unable to reach their opinions (Ružić, 2000). The development of technology and the Internet has led to the expansion of the mobile Internet, which in turn enabled the growth of the mobile market, and by proxy mobile marketing. The fact is that users are almost always near their mobile devices which are most often connected to the Internet, which in turn makes mobile marketing an unavoidable strategy of an organisation in modern business. The application of the combination of the geographic freedom of mobile devices and the speed of the Internet, a new type of economy emerges named mobile economy (Ružić, Biloš, Turkalj, 2014). Mobile marketing represents a segment of digital marketing which emerged due to the sudden development of mobile technologies and involves mobile phone usage as the main interaction channel between economic subjects and consumers. (Stanić, 2017). Mobile device marketing in the world has won first place for its influence on consumer behaviour and encouraging desired consumer behaviour and has enabled a completely new approach to marketing (Ružić, Biloš, Turkalj, 2014). Mobile marketing can be defined as “two-way or multi-directional communication and promotion of the offer between a company and a consumer using mobile media, devices, or technology” (Shankar and Balasubramanian, 2009: 118). The characteristics of mobile marketing are seen through “the usage of an interactive wireless device, with the goal of offering the user personal information with a temporal and spatial sensitivity which promote goods, services, and ideas and at the same time are generating value for all interested sides.” (Dobrinić, 2011: 238). The previous definitions can be reformulated into one that defines mobile marketing as “a marketing activity done thorough any famous information network where users are constantly connected with their mobile devices” (Kaplan, 2012: 130). It is important to mention that mobile marketing is the only truly personalised form of advertising where the consumer decides when and what advertisements they will receive on their mobile device (Dobrinić and Gregurec, 2016). Mobile advertising, with its personalisation and interactivity, is one of the most important components of marketing consumer communication (Ružić, Biloš, Turkalj, 2016).

### **3. THE DETERMINANTS OF CUSTOMER RELATIONSHIP MANAGEMENT – CRM**

Customer relationship management could be defined as a concept which had its roots in relationship marketing, and in modern business is integrated with two key segments, management, and digital technology. The main subject of marketing is the individual consumer who is an active participant in relationship development, whereby that relationship is the result of the developing partnership between the seller and the consumer. Customer relationship management is a system, a process, and a strategy and its practical application can lead to ambiguities related to its definition and reach (Dukić i Gale, 2015). „CRM is the ability to gain, retain, and increase or (if it is necessary) decrease the number of customers, and includes all methods and technologies used by business organisations to manage customer relations” (Pavičić, Gnjidić, Drašković, 2014: 139). By increasing customer loyalty, CRM aims to achieve the basic idea of developing strategies to attract consumers and maximise their value for the organisation (Dobrinčić and Gregurec, 2016). Enterprises that decide to not use this possibility to become more connected with their consumers will find it more difficult to achieve a competitive advantage (Kalakota and Robinson, 2002). By implementing electronic commerce, the economic subject can conduct business in a more economic and profitable way, increase economic transparency, and information superiority. (Meler and Dukić, 2007). „Customer relationship management is an approach in e-business management, whereby a company attempts to increase its competitive ability and strengthen its position on the market and is based on understanding consumer behaviour and how to influence consumers through effective communication, all with the goal of gaining and retaining clients, building their loyalty (commitment) and increasing the profitability of the company.” (Panian: 2003: 115). Therefore, companies that decide to tap into the potential of the electronic market have new opportunities for gaining new customers, increasing customer loyalty, becoming more profitable, and reducing the time necessary to enter a market with new products or services. (Srića and Muller, 2001). CRM is an old process whose role in business has become more understood with the development of technology and e-business, whereby a new process emerged from customer relationship management under the name electronic CRM (eCRM). This concept has enabled the integration of activities crucial for discovering and attracting consumers, as well as maintaining customer relations electronically. The combination of e-business and CRM leads to more effective communication with customers and more comprehensive assortment of consumer data, which is crucial for achieving and maintaining profit goals (Dobrinčić and Gregurec, 2016). “E-customer relationship management involves using information-communication technologies to maximise selling to existing customers, encouraging customers through digital technologies and the Internet to consistently use a company’s services, and also includes the activities of defining and choosing the customer type which will be targeted by the organisation” (Ružić, Biloš, Turkalj, 2014). Electronic CRM, when compared to the traditional approach to marketing communication, brings a new approach to marketing, whereby the consumers themselves allow and choose the content they will engage with. Electronic CRM’s purpose is to gather data on consumers with a variety of digital tools, then store the data in databases, process it and turn it into information which is used for creating a customer profile and achieving a positive purchase result and post-purchase behaviour (Ružić, Biloš, Turkalj, 2014). The integration of digital technology and the Internet has enabled new solutions for business subjects. Businesses are beginning to develop and expand thanks to information operations, and a direct contact with the user has become of utmost importance. Therefore, the differences between traditional and electronic CRM are subtle, but crucial. They involve technology for the relation between the business subject and the consumer, and which allow the consumer freedom to choose the where and the when. The consumer is no longer limited to a business subject’s personal contact, while the business subject no longer needs to have a vis-à-

vis with the consumer to determine their needs and wants (Milović, 2011). The authors Meler and Dukić (2007) mention that the future of CRM is ascertained through the availability and mobility which will permeate through the virtual space and the interaction with consumers, thereby taking the leading role instead of traditional customer relations. The power of modern technology on customer relations is seen in the transition from satisfying the needs of groups to satisfying the needs of individuals. This would not have been possible without computer systems, fast networks, and appropriate programming solutions.

#### **4. MOBILE MARKETING IN CRM**

Mobility has led to a shift in contemporary communication with users. It is assumed that mobile technologies will overtake the Internet as the leading business channel for the development of e-business in the near future (Bosilj, 2007). Mobile technologies are increasingly being treated as tools, and their application is encompassed by the information policies of the business subject (Panian, 2013). The development of mobile technologies has given an opportunity to business and economic subjects to retain existing customers and gain new ones in innovative ways. The mobile device is an extraordinary communication tool, which enables two-way communication. It is because of this that organisations have the ability to inform themselves of the consumers' interests, needs, and requests. Consumers in the 21<sup>st</sup> century are more mobile than ever before, and mobile technology allows promotional messages to reach consumers no matter the time and place. (Čavić et al., 2011). Mobile CRM could be defined as "a service whose goal is to cultivate a relationship with buyers, gain new ones, and retain existing ones, i.e., it could be defined through communication, whether we are discussing one-way or interactive communication, which is linked to the activities of selling, marketing, and offering services with the goal of establishing and maintaining a relationship with consumers between an enterprise and the customer" (Sinisalo et al., 2007: 774). To put it more succinctly "Mobile customer relationship management is an expansion of traditional CRM, considering that using mobile media (mobile phones, PDAs, etc.) is done for the same goal: managing customer relations and encouraging a mutual dialogue with the enterprise with mobile devices" (Dobrinčić and Gregurec, 2016: 296). Introducing mobile CRM enables a business to expand quicker, lower their expenditure, locate the consumers, have a larger reach of their target group, and the constant availability of consumers considering that their mobile devices are always with them no matter the time and place. (Campanovo et al., 2005). When an interaction between the business subject and the consumer occurs, it is important to monitor their communication in order to discover the in as much details as possible the needs and desires of consumers. For mobile CRM to function properly, it is crucial to create and offer content which is personalised, and also offers interaction and flexibility enabled by 21<sup>st</sup> century mobile technology (Dobrinčić and Gregurec, 2016). Other than gaining new and retaining existing customers, the primary goal of mobile customer relationship management is also based on cultivating a relationship with customers. Mobile devices enable organisations to directly communicate with consumers, thereby becoming more efficient since they know where the consumers are at any given time and what are their needs. Moreover, mobile CRM is possible because of the many features offered by mobile devices, which are availability, safety, ubiquity, personalisation, convenience, localisation of the applications, and access to the Internet (Ranjan and Bhatnagar, 2009). The mobile device as a marketing medium, in contrast to other new marketing channels, enables business and economic subjects to reach consumers even if they are not near any press, radio, television, or computer. Mobile marketing enables traditional media to use new techniques so they can increase their accessibility and interactivity. Furthermore, the existence of databases of potential and existing users is crucial for executing mobile marketing. Organisations which have access to data from the market have the possibility of communicating with consumers (Stanić, 2017).

Mobile devices are not the key component in mobile marketing, but rather the information technology that is enabled by them as tools for executing marketing communication. The development of information technology has enabled organisations to apply new mobile marketing methods, and with that has given them an opportunity to make their consumer reach even more influential. The most commonly used types of information technology with which business subjects do mobile device marketing are mobile messages, mobile applications, social media, web-content optimisation, location services, and 2D codes (Golob, 2016). Social networks have become through mobile devices the fastest growing form of mobile marketing, and consumers are using them to follow the development of enterprises, and to fulfil their personal and business needs. On the other hand, organisations can reward consumers through social media by sharing promotional events. (Stanić, 2017). Moreover, social networks are extensively used as marketing communication survey tools. An enormous number of consumers use mobile devices at least once a day to access social networks, the most famous ones are Instagram, Facebook and Twitter with which enterprises build relationships with consumers in modern business. (Golob, 2016). Business and economic subjects should adapt their content for mobile devices while using social networks and Internet websites. The optimisation of web content for mobile devices is the key prerequisite for forming a marketing relationship with consumers through mobile devices. Social media, Internet web sites and other media which are optimised for mobile devices make it easier for consumers to access needed information, which is a key factor for organisations (Golob, 2016). Since mobile devices give consumers the possibility of making purchases and searching for information and data on the Internet, with the development of mobile technologies came the emergence of mobile applications which offer many benefits. A mobile application is considered to be any content or software which can be installed on a mobile device. Since applications have to be downloaded from certified organisations, and they sometimes require the user's personal information, the implementation of mobile applications is related to creating databases which are then used for the purposes of mCRM (Dobrinić and Gregurec, 2016). Mobile applications, or more accurately mobile programmes used by consumers to execute a variety of tasks, are a growing form of promotional communication on the mobile market which allow business and economic subjects to connect with consumers outside the confines of traditional media. Through mobile applications, promotional messages can reach consumers even if they are travelling or out of reach from other types of media. (Stanić, 2017). A significant feature of mobile application advertising is the possibility of consumers reacting to the received promotional message. For example, if a consumer is encouraged by the advertisement to make a purchase, they have the possibility to click on a hyperlink which will take them to the organisation's web site or to some other media where they can make their purchase. (Golob, 2016).

## **5. RESEARCH RESULTS AND DISCUSSION**

Social networks and communication among consumers in this environment is gaining increasing importance. The prevalence of sophisticated technology has significantly influenced the importance of e-marketing. Since consumers have their mobile devices with them at all times and in any place, mobile marketing has begun to play an increasing role. The mobility of modern society has influenced the evaluation of consumer relations management and the development of marketing communication via mobile devices, i.e., an ever increasing importance has been given to marketing in CRM via mobile devices (mCRM). The aim of this paper is to show the importance of mobile marketing for business and economic entities in managing consumer relations. In order to prove the former, a sample survey was conducted (N = 122) to determine the impact of mobile marketing on consumer behavior and building relationships with a company.

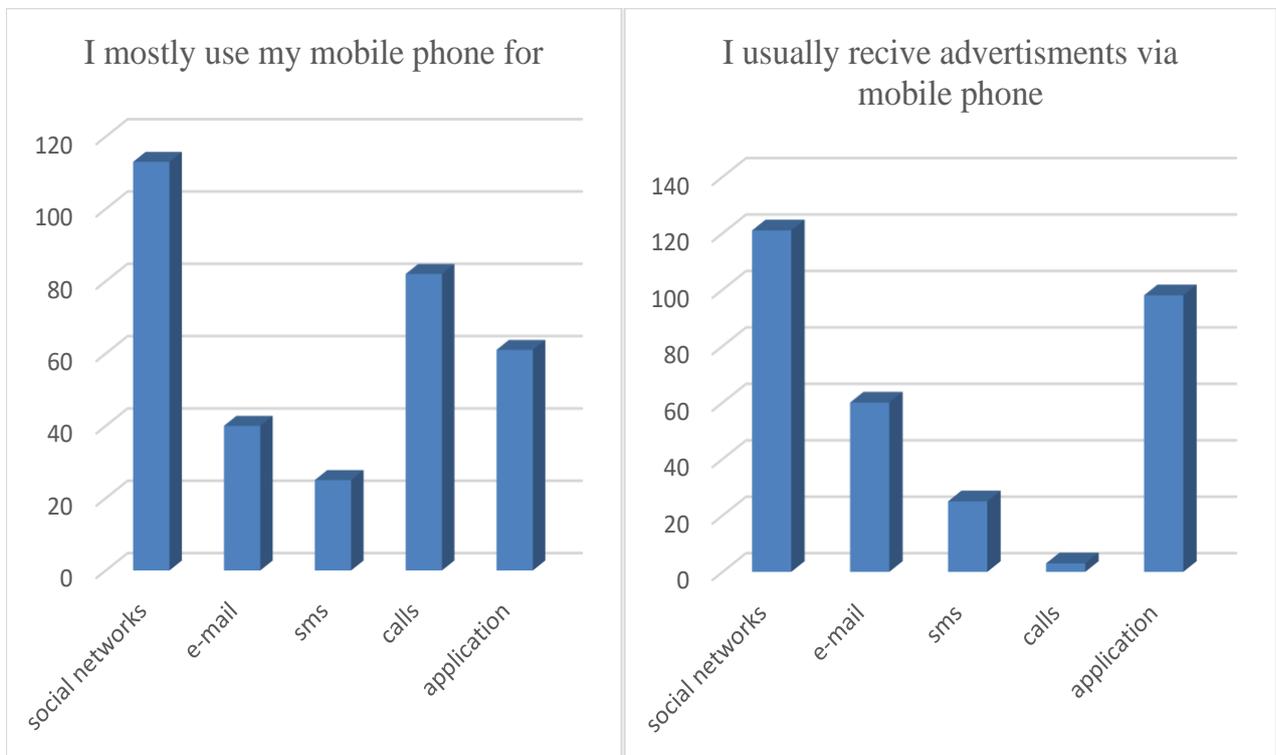
The results of the research are presented in tables, graphs and descriptive form. These sample characteristics are shown in Table 1.

*Sample characteristics, N = 122*

<b>Age</b>	
18-25	61
26-35	25
36-45	21
45-	15
<b>Gender</b>	
Female	72
Male	50
<b>I use a mobile phone</b>	
Yes	122
No	0

*Table 1: Socio-demographic data of respondents  
 (Source: Autors)*

According to the data from the table, it can be seen 50% of the sample are younger than 25 years old, and most of the respondents are women. All respondents use mobile devices. The goal of the study was to determine for what purpose do the respondents use their mobile devices the most, and how they receive advertisements on their mobile devices. The collected data is shown in the following table.



*Graph 1: Reasons for using a mobile device and the most common channel for receiving ads  
 (Source: Autors)*

Since it was determined that the users access social networks most frequently through their mobile phones, and analogously they receive advertisements most often through social networks and applications, it was important to determine do enterprises care about maintaining CRM through mobile applications. Therefore, the respondents were asked the following set of questions:

On my mobile device I have applications of brands that I am loyal to	116
On social networks I follow brands that interest me	112
I often receive advertisements from brands that interest me through my mobile phone	122
I often buy online brands that interest me	98
I often get extra benefits through my mobile phone from brands that interest me	86
I am loyal to certain brands	109
I frequently see advertisements of brands that I am loyal to	112

*Table 2: Reasons for using mobile devices and the most common channel for receiving advertisements*  
 (Source: Authors)

From the above, it can be concluded that users have strong communication with brands that interest them through mobile phones, and that the aforementioned brands maintain good relations with their users. The users themselves feel a strong attachment to the brands, also emphasizing that they are frequently contacted, rewarded, and stimulated by the enterprises, and the users also show loyalty towards certain brands.

## 6. CONCLUSION

The information revolution has enabled the development of the modern business, i.e., made it possible to reduce the cost of analysing, transferring, and obtaining data which changed how business and economic subjects conduct business. Social media has had a profound impact on the changes in communication in today's society, without even considering the sheer volume of gathered data on the presumably private habits and interests of its users. Through social networks, enterprises can inform the market and receive a response easier than ever before, which makes this medium a tool that enables the cooperation between suppliers and consumers. (Šimec and Duk, 2011). Contemporary times are an era that is based on the growth in numbers of access devices. The ubiquitous usage of mobile devices is leading to a state where traditional ways, which are oriented towards personal computers and corporate applications, are becoming ancient history. Mobile accessibility is the fastest growing trend in information communication technology, and today's world has been overtaken by the mobile digital society. Mobile marketing is done through the omnipresent virtual network where consumers are constantly "active" by using their mobile devices. Marketing which is done through mobile devices are perhaps the only truly personalised form of advertising where the consumer decides when and what advertisements they will receive on their mobile device. This is why personalisation is a factor that is crucial for the success of mobile marketing. Modern customer relations are a turning point since nowadays economic subjects are now focused on establishing a unique individualised relationship with the consumer. A change is also occurring in how consumers think, whereby consumers want to have the possibility of choosing when and how they will be contacted. Business and economic subjects in the 21<sup>st</sup> century realise the importance of discovering potential and retaining and understanding existing consumers, therefore the core of business is reorienting to the consumer and to satisfying all their desires, needs, and requests as completely as possible.

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# INFORMATION AND DISINFORMATION: IMPACT ON NATIONAL SECURITY IN THE DIGITAL AGE

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## **ABSTRACT**

*The objective of this paper is to provide a view on the problem of the importance and role of strategic global policies and investments in the protection and resiliency of critical infrastructure, national and international, in the context of modern hybrid threats. Disinformation, broadly defined as false information intended to mislead, emanates from both states and non-state actors, and affects communities across the globe. Fake news and deception are ages-old phenomena, but the digital age has facilitated the amplification and manipulation of false information to an unprecedented extent through internet and new media. Acknowledging the importance of disinformation and its consequences and considering the fact that in future wars the primary target of the attack is going to be critical infrastructure (one or more) the cyberspace will be a tool for conducting attack(s) through hybrid threats. Potential solution to the problem of insufficient state protection of critical infrastructure should be observed through the prism of building investment policies in broader national strategies for protecting critical infrastructure as well as national security budget defence expenditures/allocations leading to higher level of protection and resiliency of critical infrastructure.*

**Keywords:** *critical infrastructure, internet, disinformation, hybrid threats, information, digital age, national security*

## **1. INTRODUCTION**

The spread of fake news and intentionally manipulated information and disinformation through online platforms has been recognized for some time as one of the key challenges facing modern democracies (Khaldarova, Pantti, 2016). Pressure from international organizations and individual national authorities, especially within the European Union, resulted in a series of measures that leading technology companies applied in their services to reduce the problem. But the coronavirus pandemic increased concern, and the World Health Organization (2020) and the European Commission (2020) further strengthened cooperation with platforms in the fight against the infodemic. As disinformation and hybrid campaigns are often unpredictable and deliberately confusing, it is important to detect them as early as possible. Governments, but also the police, media, the private sector and civil society groups, need to improve detection and analytical capabilities, basing their findings on comprehensive monitoring and data gathering. This means investing in both the tools needed to detect the hostile narratives that are gaining momentum and in the experts needed to make sense of this information. This will undeniably require more resources and investment. (Recommendations, Friends of Europe, 2018)

## **2. INFORMATION, DISINFORMATION AND HYBRID MEDIA: IMPACT ON NATIONAL SECURITY**

Professional and independent media have long been recognized as one of the key components of democracy. On one hand, they provide citizens with the information they need for participation and making responsible and informed decisions. On the other hand, the media in a democracy act as the fourth power as "custodian of information". (Brogi, et al., 2018.) New media often includes all the internet platforms and all the activities undertaken by the internet platforms are voluntary, since the activity of the platforms in this area is almost not regulated

at all, especially at the supranational level. At this level, it is not easy to distinguish *information* from *disinformation* without raising citizens' media literacy. In its worst form, disinformation is a consciously created (invented) lie, the opposite of the truth. It is false information, marketed and spread with the intention of producing harmful political, social, economic, health and other consequences for an individual, group or society as a whole. According to UNICEF's definition, we distinguish three main types of misinformation:

- 1) Incomplete information: the information is untrue, but not created with the intention of misinforming or causing harm, even though it may cause them.
- 2) Disinformation: false information, intentionally created to cause harmful consequences to a person, group, organization, society, state, etc.
- 3) Malicious information: information based on reality, which is used to cause harmful consequences to a person, social group, organization, state, etc. (UNICEF, 2018)

Missing information is the most common occurrence. They are mainly caused by the strong influence of the first, original publication of the information. It is a consequence of the digital age, the quality and professionalism of journalists and media organizations. The good thing is that the missing information is quickly corrected. Most often, they do not produce lasting consequences for individuals, groups and society, but with frequent repetition they endanger the trust of the audience in the publisher or journalist personally. In its essence, disinformation means a malignant form of mass communication and abuse of mass media. We can observe the general characteristics of misinformation through several characteristics of their occurrence, which derive from the already mentioned definition. The first characteristic is that it is a matter of lies, incorrect data, events, persons and false opinions that aim to influence public knowledge. Another important characteristic is intention. By the nature of things, it exists only with the authors of disinformation. It is reasonable to expect that the author can be an individual or a group, or even an entire organization and creative teams. However, the false opinion can be attributed exclusively to the author of the disinformation, because only he is fully aware that the stated factual framework is not true. Another term to consider is an opinion based on a lie, as a result of misinformation, but without the intent to cause harm. An opinion based on a lie is an expression of a deep belief in the truth of such an opinion, so the individual who expresses it perceives it as knowledge. It is extremely important to distinguish between these two terms in the disinformation process, especially in the application of appropriate activities and measures against this phenomenon (Popovac, 2019, pp 68-69). The new media system is increasingly defined by organizations, groups and individuals who are able to combine the old and the new within what is called a hybrid system. They are able to create, elicit and direct information to suit their goals. In turn, they are able to change, enable and disable the power of others by moving between old and new media. The concept of a hybrid media system is a system in which the aging and new media forms intertwine, and actors are involved in complex relationships within the flow of content (Laaksonen, 2017, p 2). Hybrid media system is a concept proposed by Andrew Chadwick (2013). According to his model, old and new media forms are intertwined, and the actors are involved in complex relationships within the content flow of media systems (Laaksonen, 2017, pp 6 – 7). The hybrid media system is based on interactions between older and newer media logics - where the logics defined as bundles of technologies, genres, norms, behavior and organizational forms - in reflexively connected social areas of media and politics. Actors in this system are articulated by complex and increasingly developed relationships based on adaptation and mutual dependence and concentrations and diffusions of power. Actors create, entice or manage information flows in ways that suit them goals and in ways that modify, enable or disable other agencies, across and between a range of older and newer media settings (Chadwick, 2013, p 4). The hybrid media system is placed in the conventional media through classic public relations tactics - especially informational

subsidies. The very concept of hybridity, hybridity and hybridization is not unknown in the study of media, but it experiences its flourishing in today's media environment (Lesinger, 2018). The media can fulfill these roles only if pluralism is ensured, one of the main goals of media policies, which is achieved by effective protection of freedom of expression and the right to access information, protection of professional conditions and safety of journalists in the performance of their work, transparency and plurality of media ownership, political independence of the media and social inclusion, i.e. appropriate representation of different interests and worldviews, both in management structures and content. Over the past two decades, the number of sources and scope of news available online has increased dramatically. This was greatly facilitated by online platforms that allowed individuals to share information with potentially global audiences. Although at first glance this could be interpreted as democratization and greater pluralization in public communication and media in whole, the evidence suggests that big »load« of information leads to information overload and information disorder, which potentially has negative consequences for informed citizenship and democracy. Online platforms, like social media, do not produce their own content, but algorithmically create personalized recommendations of media, political and other content according to the characteristics and preferences of individual users. (Helberger, 2019.) While in the first phase of the existence of online platforms and their algorithmic systems for recommending content, they were closer to the liberal model, putting the interests and information preferences of individual users in the center based on the data and knowledge they collect about them, recently there has been an increasing emphasis on the expectation that platforms moderate and present content so that it reflects the diversity of ideas and opinions in society. In short, platforms are increasingly expected to, as one of the key actors in the information environment, realize their democratic function from the perspective of participatory democracy based on the principles of pluralism. Such an approach includes transparency and responsibility of those who create algorithmic decision-making because people's attention is reduced, so the criteria according to which something gets more and something less visibility must be clear and verifiable, which is currently not the case. In traditional media, editorial responsibility is legally regulated. (Powers, 2017) The internet platforms, which are not media in the traditional sense, but are not exclusively technological companies, a similar regulation of editorial responsibility, pluralism and transparency requirements still largely does not exist. Their functions, which are similar to those of the media, are currently not under the supervision of media and other regulators in most of the countries in which they operate. One of the open questions is jurisdiction, since it is mainly about American companies (as Meta for example) and corporations, which are significantly shaping information environments around the world. There is no consensus on who should regulate the operation of the platform, in what way and in what manner, given that it encroaches on different areas of public and commercial activities and that the relationship between social and market values is interpreted differently in the United States of America than, for example, in Europe, and the value differences become even more pronounced when looking at the global picture. The platforms themselves use this special status to bypass sector regulations and public responsibility. "It is clear that regulation and policies designed for traditional media do not match the complexity of the challenges associated with online platforms. The difference is particularly evident in the dimension of collecting and using a large amount of data about users, which gives platforms an unprecedented advantage in the amount of knowledge and control they have over users, as well as in the possibilities for shaping the information environment" (Helberger, Kleinen-Von Königsłow, Van der Noll, 2015), "and in attracting advertisers through microtargeted advertising that is in certain cases, the main catalyst for the spread of disinformation" (Nenadić, 2019). Despite the fact that they play a vital role in the realization of important public values, the operation of the platforms is currently almost completely left to self-regulation based on their voluntary cooperation with international

organizations, such as the European Commission and the World Health Organization. This type of self-regulation increases the already great power of platforms in deciding on the credibility, value and legality of content, while at the same time there is no effective transparency of their actions, both in making internal policies that shape the information environment and in their implementation. The functioning of online platforms is based mainly on their internal policies, technologies and terms of use. There is almost no regulation in this area, and it is questionable whether content regulation would bring more benefits or harm, if we take into account the complexity of implementation, since we are talking about corporations that operate globally and mediate huge amounts of content, without harming freedom expressions. In recent years, under the pressure of the interested public and the development of the experience and methodologies of the scientific community, the content moderation policies of the leading platforms have become somewhat clearer, but they are not yet completely transparent. For example, we do not yet know exactly which criteria Facebook's algorithm takes into account in determining and ranking content according to each individual user, and it is not even completely clear whether and how Facebook separates political advertising from other ads that are not directly political, but promotes a certain political agenda (OECD, 2019).

### **3. EUROPEAN UNION VS. DISINFORMATION: EUROPEAN INSTITUTIONAL FRAMEWORK FOR COUNTERING DISINFORMATION**

Online platforms present strong drivers of innovation and play an important role in Europe's digital society and economy. They cover a wide range of activities including online marketplaces, social media, creative content outlets, app stores, price comparison websites, platforms for the collaborative economy as well as search engines. Also they share key characteristics, such as the use of information and communication technologies to facilitate interactions between users, collection and use of data about such interactions, and network effects. The European Commission's approach to online platforms focuses on fostering a trusting, lawful and innovation-driven environment in the EU. To this end, the Commission identified key areas of interest in its Communication on Online Platforms. The guiding policy principles are:

- to create and maintain a level playing field for comparable digital services;
- to ensure responsible behaviour of online platforms to protect core values;
- to foster trust, transparency and ensure fairness on online platforms;
- to keep markets open and non-discriminatory to foster a data-driven economy. (European Commission, Online platforms, 2022)

As the main factor of EU regulation on fairness and transparency in online platforms the European commission has adopted a proposal for a Digital Services Act (DSA) in December 2020. Together with a Digital Markets Act, the DSA aims to create a safer and more digital space for all users where the fundamental rights of users are protected and to establish a level playing field for businesses. The DSA has 3 specific goals: to protect consumers and their fundamental rights online more effectively; to establish a powerful transparency and accountability framework for online platforms and to foster innovation, growth and competitiveness within the single market (European Commission, The Digital Services Act package, 2022). The rapid and widespread development of digital services has been at the heart of the digital changes that impact our lives. Many new ways to communicate, shop or access information online have appeared, and they are constantly evolving so this digital acts package is intended to ensure that European legislation evolves with them. Online platforms have created significant benefits for consumers and innovation, and helped the European Union's internal market become more efficient. They have also facilitated cross-border trading within and outside the Union.

This has opened new opportunities to a variety of European businesses and traders by facilitating their expansion and access to new markets. Also as digital services include a large category of online services, from simple websites to internet infrastructure services and online platforms the rules specified in the DSA primarily concern online intermediaries and platforms, such as online marketplaces, social networks, content-sharing platforms, app stores, etc. While there is a broad consensus on the benefits of this transformation, the problems arising have numerous consequences for our society and economy. A core concern is the trade and exchange of illegal goods, services and content online. Online services are also being misused by manipulative algorithmic systems to amplify the spread of disinformation, and for other harmful purposes. These new challenges and the way platforms address them have a significant impact on fundamental rights online. Despite a range of targeted, sector-specific interventions at EU-level, there are still significant gaps and legal burdens to address. The accelerating digitalisation of society and the economy has created a situation where a few large platforms control important ecosystems in the digital economy. They have emerged as gatekeepers in digital markets, with the power to act as private rule-makers. These rules sometimes result in unfair conditions for businesses using these platforms and less choice for consumers. With these developments in mind, Europe requires a modern legal framework that ensures the safety of users online, establishes governance with the protection of fundamental rights at its forefront, and maintains fair and open online platform environment. In 2015, the European Union recognized disinformation as one of the important security challenges and strengthened measures to counter disinformation. The first important activity in this regard was the establishment of the East StratCom Task Force with the task of countering Russian disinformation campaigns. The activities of this group are aimed at effectively communicating EU policies to the eastern neighbors, strengthening the media environment in the eastern neighborhood by providing support for media freedom and strengthening independent media, and strengthening the EU's ability to predict and suppress pro-Russian disinformation and to inform each other about it. Another important document is the joint communication *"Strengthening resilience and increasing the ability to respond to hybrid threats"*. (Kalniete and Pildegovics, 2021) In 2018, the European Commission published a significant document, *Tackling online disinformation: a European Approach*, based on public discussion and recommendations of an expert group. In the very introduction, the European Commission states that the exposure of citizens to wide-ranging disinformation, including misleading or outright false information, is a major challenge for Europe. This document indicates that Internet platforms, especially social networks, video sharing platforms and search engines, play a key role in the spread of disinformation. These are new media that, unlike traditional media, which are subject to a wide range of rules on impartiality, pluralism, diversity, advertising and other regulatory areas, are not regulated. The Commission also warns that the problem of misinformation should be seen in the broader context of interconnected technological, economic and political parameters. Economic insecurity, extremism and cultural change create anxiety and provide fertile ground for disinformation campaigns that fuel tensions, social polarization and mistrust. Clear political will and commitment to European values are prerequisites for long-term suppression of disinformation. The document emphasizes that the spread of disinformation is also taking place in the context of major changes in the media, which are going through a deep transformation aiming to adapt business models in view of the strength of the challenges, the European Commission warns that there is no single solution that could solve all the challenges associated with disinformation, but activities it should be aimed at several areas according to the following principles and goals:

- 1) improve transparency regarding the origin of information and how it is produced, sponsored, disseminated and targeted to enable citizens to evaluate the content they access online and detect possible attempts to manipulate opinion

- 2) to promote the diversity of information in order to enable citizens to make decisions based on critical thinking, through support for high-quality journalism, media literacy and rebalancing the relationship between creators and distributors of information
- 3) promote the credibility of information by giving indications of its reliability, especially with the help of trusted labels and improving the monitoring of information and by verifying the authenticity of influential information providers
- 4) raise awareness and encourage greater media literacy, broad stakeholder participation and cooperation of public authorities, internet platforms, advertisers, reliable reports, journalists and media groups.

A well-functioning, free, and pluralistic information ecosystem, based on high professional standards, is indispensable to a healthy democratic debate. Bringing this Communication the Commission is attentive to the threats posed by disinformation for our open and democratic societies with comprehensive approach that aims at responding to those serious threats by promoting digital ecosystems based on transparency and privileging high-quality information, empowering citizens against disinformation, and protecting our democracies and policy-making processes. Also the Commission calls on all relevant players to significantly step up their efforts to address the problem adequately. It considers that the actions outlined above, if implemented effectively, will materially contribute to countering disinformation online with continuous work in this area. (Communication Tackling online disinformation, 2018) The document was signed in September 2018 by representatives of Facebook, Google, Twitter and Mozilla, as well as representatives of advertisers. Social networks and advertisers with a self-regulatory act committed to support information suppression efforts in five areas: control of ad publication, political and thematic advertising, integrity of services, strengthening the position of consumers and strengthening the role of the research community. All national legislation, including the Croatian have an incorporated protection of individual rights, groups, companies or society as a whole from damage (either material or immaterial) that could be caused to them by spreading untruths. Such protection is provided by the courts in court proceedings. This type of opposition is suitable for the protection of the legitimate interests of persons with recognized active identification and only when it is possible to identify the actual injured party. Considering the length of court proceedings, the narrowness of the publication space and the public's lack of interest in a conviction, the effectiveness of this protection in terms of influencing public knowledge is limited in scope, and sometimes harmful. Since so far no member state, including Croatia, has not developed a particularly effective model for countering disinformation, we are of the opinion that all states, individually and together, should implement the principles of the European approach (Popovac, 2020, p 72).

#### **4. INSTEAD OF CONCLUSION: CONTEMPORARY NATIONAL SECURITY CHALLENGES, HYBRID MEDIA AND INFORMATION WARFARE**

It is considered, there are three types of hybrid warfare. The first one is often labelled as an attack on governance, uses legal means to undermine democratic liberal societies by inserting foreign influence or trying to gain financial and economic leverage over our normal democratic processes. The second type of hybrid warfare consists of the more brazen, illegal attempts to undermine and polarise our societies by sowing fear and mistrust and it is achieved by carrying out orchestrated attacks against the core elements of our social cohesion: free and fair elections, critical infrastructure and IT networks, the credibility of news and information, and the integrity of our business and financial transactions. The third – and the most dangerous – type of hybrid warfare means using the aforementioned strategies as preparation and prelude for a military attack (Shea, Friends of Europe, 2018, p 6).

The European Commission in Communication from 2018 »A European approach to tackle online disinformation« the following overarching principles and objectives are given in order to take action to tackle disinformation:

- to improve transparency regarding the origin of information and the way it is produced, sponsored, disseminated and targeted in order to enable citizens to assess the content they access online and to reveal possible attempts to manipulate opinion.
- to promote diversity of information, in order to enable citizens to make informed decisions based on critical thinking, through support to high quality journalism, media literacy, and the rebalancing of the relation between information creators and distributors.
- to foster credibility of information by providing an indication of its trustworthiness, notably with the help of trusted flaggers, and by improving traceability of information and authentication of influential information providers.
- to fashion inclusive solutions. Effective long-term solutions require awareness-raising, more media literacy, broad stakeholder involvement and the cooperation of public authorities, online platforms, advertisers, trusted flaggers, journalists and media groups. (Communication, 2018)

Building on all gathered input, EU clearly states to take the actions which are also complement the General Data Protection Regulation, which applies across the EU from 25 May 2018, and which together strengthen protection of the personal data of users of online platforms. The General Data Protection Regulation clarifies the notion of consent and includes the key concept of transparency of processing. It also clarifies and harmonises the conditions under which personal data can be further shared ("further processed") (Communication, 2018). Today, state and non-state actors are challenging nations, institutions and private companies through a wide range of overt and covert activities targeted at their vulnerabilities. Both NATO and the European Union refer to these as hybrid threats. There are a wide range of measures in hybrid campaigns, ranging from cyber attacks and disinformation to the disruption of critical services, such as energy supplies or financial services; the undermining of public trust in governmental institutions; and exploiting social vulnerabilities. Once a state is weakened sufficiently, the aggressor's strategic aims can be consummated by the use of conventional or paramilitary forces. A hybrid approach lowers the political price for aggression, making regime change and territorial annexation possible. Many refer to this phenomenon as 'hybrid warfare' and in the process 'militarise' the concept, which is actually much broader and more complex in nature. A whole-of government and whole-of-society approach is needed to access the necessary means and authorities to address this phenomenon. Thus, hybrid threats are best understood as an attack on governance – specifically democratic governance. (Kremidas-Courtney, Friends of Europe, 2018, p 13) Such threats have always existed, of course, but what makes them different are the new vulnerabilities presented by a globalised and more interconnected world; instant global communications; a globally connected system of finance and commerce; and interconnectivity of gas and electricity distribution grids across borders. Hybrid threats represent the crucial threat to critical infrastructure of any country on global level because the hybrid operations and tactics combine military and non-military as well as covert and overt means, including cyber-attacks, disinformation campaigns, use of irregular groups and regular armed forces, espionage, sabotage, economic pressure and personal coercion. Responsibility for building resilience against, and responding to, hybrid attacks lies primarily with individual states. However, it is impossible to deal with the range of such threats alone. Given the multitude of domains and individuals potentially affected, as well as the cross-border nature of many hybrid activities, more cooperation is required at all levels. This includes international organisations like NATO and the European Union, who play an increasingly important role in bringing together Both NATO and the EU have made significant progress in recent years to

address rapidly evolving security challenges different perspectives, knowledge and expertise. As disinformation and hybrid campaigns are often unpredictable and deliberately confusing, it is important to detect them as early as possible. Governments, but also the intelligence agencies, police, media, the private sector and civil society groups, need to improve detection and analytical capabilities, basing their findings on comprehensive monitoring and data gathering against fake news and disinformation campaigns undertaken by broadcasters, disinformation services and online trolls. Also, developing and defining industry standards to protect critical infrastructure (Akrap, 2019) as well as identifying operations and capabilities to be deployed in the case of an attack should be the key steps in order to protect national security of any country from hybrid threats which has been clearly stated in Joint communication to the European parliament, the European council and the Council: Increasing resilience and bolstering capabilities to address hybrid threats (2018) and in Joint communication to the European parliament and the council EU Policy on Cyber Defence (2022)

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## CRISIS MANAGEMENT IN THE COVID-19 PANDEMIC

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### ABSTRACT

*This paper analyzes what the tasks of crisis management are, how it is implemented, how much trust the nation or the organization's employees have in it, and how the crisis managements of the Republic of Croatia and Europe reacted to this unprecedented crisis. Crisis management has a clear goal, which is to protect human capital, protect the organization's stakeholders and ensure key business processes in the short and long term. Although crisis management in Croatia responded well to the health threat of the pandemic in the first months of the pandemic, financial, economic and tourism management did not adequately respond to all challenges, nor did they have concrete plans or knowledge on how to "get the business back on its feet" after such an unexpected disruption. It is believed that, in addition to the crisis management that dealt with the health aspect of the pandemic, one should have been established for the previously mentioned issues, however this remained only an idea. EU did not cope well in the first weeks of the pandemic and its response to the pandemic, should not serve as an example to other countries of the world ( Janse, Tsanova, 2020).*

**Keywords:** *Crisis management, COVID-19 pandemic, Croatia, EU*

### 1. INTRODUCTION

The COVID-19 pandemic, caused by the new coronavirus, appeared in December 2019 in the Chinese city of Wuhan and from there, throughout 2020 and most of 2021, rapidly spread throughout the world ( Connelly et al., 2021). At the time of writing this seminar paper, more than 160 million people have been infected with this disease, and about 3 million and 300,000 people have died (www.worldometers.info). As far as the situation in the Republic of Croatia is concerned, over 345,000 cases and almost 7,600 deaths have been confirmed so far. The COVID-19 pandemic represents a major crisis situation that has affected the entire world, including the Republic of Croatia. Namely, it affected all industries and business processes and changed the usual way of life of all people, imposed the need to adhere to rules that no one in modern history had to adhere to, and caused disruption on a global level that has lasted for more than a year (according to Connelly and et al., 2021). Many organizations and countries were not ready to meet this crisis, however, as the days and weeks went by, the crisis management of a large number of countries and various organizations, systems and companies was forced to respond to the challenges posed by the pandemic (Mikac, 2020) and ensure the conditions for as normal functioning as possible and as little loss of money and manpower as possible, despite the disruption caused by the COVID-19 pandemic (Đukić, 2020).

## **2. CRISIS MANAGEMENT**

Crisis management can be defined in different ways. First of all, it means a specific way of working with the aim of managing and making decisions that lead the company in the direction of getting out of the crisis situation (Kruljac, Knežević, 2020). Also, it can be defined as a series of factors designed to suppress crisis events and reduce actual damages. It is these factors that try to prevent or reduce the negative outcomes of the crisis and thus protect the organization, stakeholders and/or industry from damages (Azinović, 2016 according to Đukić, 2020). From all of the above, we see that crisis management has a clear goal, which is to protect human capital, protect the organization's stakeholders and ensure key business processes in the short and long term (Đukić, 2020). He is the one who must be able to deal with the crisis and certain negative effects that can threaten the survival potential of the organization (Kruljac, Knežević, 2020). It should be emphasized that, in the case of crisis and crisis situations, management mostly focuses on the economy and the economy, but the crisis also occurs in other aspects of human work and life (Đukić, 2020). Specifically, during the pandemic period, it appeared in the health sector and at the personal level, that is, at the level of the psychological state of individuals (Kruljac, Knežević, 2020). Finally, it is important to clarify what a crisis is, so that a distinction can be made between that term and the term crisis management itself. Namely, a crisis represents a state, event or process that can cause great damage to the entire society, and recognizing the problem is the first step in dealing with the crisis (Skorić, 2017 according to Đukić, 2020). Also, it can be defined as any deviation or disturbance in the business or functioning of society that attracts the attention of the public and the media and prevents the normal operation of the organization or the state (Kruljac, Knežević, 2020). In accordance with the aforementioned definition, the authors also state four basic characteristics of a crisis: unexpectedness, creation of uncertainty and threat to important goals. It is precisely these characteristics that crisis management deals with. Its establishment enables a clear overview of the procedures which is necessary to undertake in order to master unfavorable situations, but it also enables a transparent distribution of responsibilities and mechanisms for effective decision-making and measures necessary to ensure the existential needs of the organization and its stakeholders (according to Glavaš, 2021). Thus, the establishment of a crisis management system makes the organization a collaborative, adaptable and responsible structure and extremely resistant to all potential internal and external shocks (according to Mikac, 2020, Glavaš, 2021).

## **3. CRISIS MANAGEMENT AND HUMAN RESOURCES MANAGEMENT IN THE COVID-19 CRISIS**

A large survey conducted by the Dekra portal (2020) showed the most important and most frequent factors used by crisis management experts during the management of human resources in the COVID-19 crisis. Although the above-mentioned factors primarily relate to crisis management in companies, it should be emphasized that they can be applied to the entire state system and to the way in which, for example, the Civil Protection Headquarters and the Government of the Republic of Croatia relate to the nation (Mikac, 2020).

- 1) It is important to ensure safe work for employees - it is very important to devise a plan in which way the workers will perform their work, and at the same time be safe. The first option is designing work from home, and the second is ensuring all protective measures so that employees feel safe at the workplace (for example: disinfection of work surfaces, safe transportation to work, dividing employees into shifts, providing protective masks and the like).
- 2) Put the focus on employees - namely, employees are the company's most valuable resource, and although mass layoffs seem to be the simplest solution to reduce costs, a much better

- option would be to redistribute working hours and tasks, annual vacations, request potential co-financing from the state, postpone salary or reduce other expenses in the organization.
- 3) Communicate honestly and openly with your employees - about the situation you are in, what the next steps are, what they can expect. It is frequent and honest communication that reduces anxiety and stress among employees and thus contributes to a healthier working atmosphere.
  - 4) Have understanding for employees and provide them with support - show empathy for the fears that arise in these crisis situations, provide a contact for help and answer all their questions (Đukić, 2020).
  - 5) To ensure a certain amount of "normality" in this crisis situation - it is evident that the routines that people are used to are disrupted (work from home, school is online, time spent with friends and work colleagues is limited, working hours are limited for cafes and restaurants) so it is necessary to ensure contact, online meetings, conversations and topics that are not exclusively business and that will provide a departure from the current situation. Therefore, you need to build a friendly relationship with your employees, which will ultimately result in their greater motivation for work (according to Đukić, 2020).
  - 6) Stress management - it would be great if workshops could be organized on how to live with stress, how to minimize it, how to deal with work and daily activities at home, how to organize yourself better and make the most of the given working conditions, how use the free time for exercise, meditation, nature, an online course, learning a new language, reading or anything that can relieve them of stress.
  - 7) Social networks - represent one of the main communication channels today, they can be used to send a clear message to employees and the public, they can be used to publish motivational announcements, pictures of employees and their "new" workplaces (working from home), a view of the situation from another perspective perspectives, optimism, the display of families and personal activities of employees and many other ideas that can help each of the employees feel close to their colleagues and to see that it is not only them in this situation, but that all their colleagues also work from home, with they take care of the family, do household chores and the like (according to Đukić, 2020).

#### **4. PREVENTIVE STEPS TAKEN BY CRISIS MANAGEMENT**

Whether it is a war, a global crisis, climate change or a pandemic, it is very important in the country we live in or, at a lower level, in the institution where we work or the school we attend, to have a team of crisis management experts who will calmly and react calmly to unpredictable and potentially dangerous situations for the state or institution (Vuković, 2020). Glavaš (2021) lists several important steps that the institution/company/state should take as part of crisis management. First of all, if possible, the emergence of a crisis should be predicted, and it is important to ensure adequate responses, as well as the resistance of the state, county, or at the lowest level - some organization - to a wide range of risks. It is this risk analysis that is the established step that serves as the basis for the preparation of the state/organization for potential crises, and takes place in such a way as to identify the main threats, to analyze the dangers and assess the sensitivity to them (Glavaš, 2021). Also, this first phase includes the creation of a crisis management plan, the selection and training of a crisis management team, and the implementation of exercises to test the crisis plan, that is, the team. The *Crisis Management Plan (CMP)* includes the most important contact information, reminders for normal handling in a crisis situation, and forms used to document responses to a crisis, which should shorten the response time to a crisis. The crisis management team should include experts in law, security, operations, finance, human resources and public relations, and should practice decision-making in a crisis situation at least on an annual basis (according to Đukić, 2020, Glavaš, 2021). Then, the author emphasizes that it is very useful to analyze all possible situations or scenarios that

may occur after the emergence of a crisis. Some organizations and, when it is a global crisis, some countries develop an intervention plan for action in crisis situations, test it in the context of different situations and define a person or team for crisis situations to analyze, plan and coordinate activities in the event of a crisis. It should be emphasized that this kind of planning is not possible during the COVID-19 pandemic, especially not in the states that were among the first to be affected (Mikac, 2020). However, countries where the pandemic started a little bit later (for example – the United States of America), had an advantage over other countries because they had time to take this step (Vuković, 2020, Glavaš, 2021). Also, although this step was not possible at the time when the first wave was raging, it was certainly done in a large number of countries just before the second and third waves, considering earlier experiences (Janse, Tsanova, 2020, Glavaš, 2021). It should be emphasized that a manager (or, if looking at the state level, the government) who refuses to face the fact that the organization (state) is in crisis, represents the greatest danger to its resilience and unnecessarily delays and complicates the exit from the crisis. As far as the specific situation with the pandemic is concerned, an example of the above can be seen in Brazil, where their president refuses to accept that the COVID-19 virus exists and, in order to save the economy, does not want to close the country or introduce any restrictive measures, which resulted in harsh criticism from the developed countries of the world and caused the death of thousands and thousands of Brazilians infected with COVID (according to [www.aljazeera.com](http://www.aljazeera.com)). In accordance with all the above, it should be mentioned that, in the response to the crisis, everything that was done in the previous, anticipatory phase will immensely benefit crisis management in dealing with future crisis situations and in properly and effectively dealing with the current one, if it was well foreseen through the previously mentioned steps (Glavaš, 2021). However, it is necessary to emphasize that, when a crisis occurs, there is still a very large amount of work to be done and to determine whether, and to what extent, certain aspects of the organization (state) will be disrupted (Mikac, 2020, Glavaš, 2021). So, in the crisis response phase, it is necessary to act quickly, accurately and consistently (Glavaš, 2021). Also, it is important to take into account the media, which, if not provided with all the necessary information, turn to other sources to cover the news, which can sometimes mean spreading misinformation and information that can damage the reputation of the organization. Therefore, the organization's relationship with the media comes to the fore. Namely, if a long-term, partnership relationship between the organization and the media has been maintained, they will be more inclined to check the credibility of the information before publishing it (Mikac, 2020). It is important to have consistency, and this is best achieved through the constant exchange of information among members of the crisis team. It is practically impossible for only one person to communicate with the public during the entire duration of the crisis, but it should also be borne in mind that corporate communication should not be left to chance or lower-level referents and their assessment of the importance of the situation (according to Glavaš, 2021).

## **5. THE INFLUENCE OF LEADERSHIP STYLES OF CRISIS MANAGERS ON THE PROACTIVITY OF EMPLOYEES IN ORGANIZATIONS**

Employee management mostly takes place through two traditional types of leadership - through transactional leadership, which is generally negative and should be avoided, and transformational leadership, which most often represents a positive leadership style and, if properly applied, has a favorable effect on employee productivity (according to Brčić et al., 2013). However, it should be emphasized that the most desirable combination of these two leadership styles is (Đukić, 2020). Transformational leadership is characterized by several types of transformational behavior: idealized influence, intellectual stimulation and individualized care, and inspirational motivation (Đukić, 2020), which is particularly important during a pandemic.

Idealized influence implies behavior that arouses strong emotions in employees and the desire to identify with the head of the organization. Furthermore, intellectual stimulation implies behavior that encourages an increase in employee awareness of a problem (on a specific example: the COVID-19 pandemic) and influences their questioning of values. Individualized care includes providing support, encouraging and teaching subordinates, and inspirational motivation refers to the expression of an attractive vision, the use of symbols that will focus the efforts of subordinates, model appropriate behavior and strengthen team spirit (Đukić, 2020). Transactional management, on the other hand, is based on conditional rewards (the goal of which is to influence employee motivation as an external factor) and passive or active management by means of exceptions (practicing penalties and other corrective actions that are a response to deviations from work standards) ( Yukl , 2008 according to Đukić, 2020). Thus, it can be observed that transactional leadership is distinguished by the use of authority and power in order to achieve ultimate goals, unsuccessful tasks are punished, and desirable ones are rewarded. If the goal of the organization is for its employees to be proactive, this form of leadership is by no means a good choice (Brčić et al., 2013). Transformational leadership, on the other hand, encourages innovation, creativity and employee motivation, and transformational leaders are more inclined to develop good interpersonal relationships, empathy and cooperation with an understanding of the contributions of engaged employees (Brčić et al., 2013), which is particularly important in crisis situations such as is the situation with the COVID-19 virus pandemic. The result of this type of leadership will be satisfied employees, who feel that they have contributed to the organization, and are very proactive and cooperative (Đukić, 2020). However, it is also necessary to apply aspects of transformational leadership that encourages effective communication and the development of employee trust, which is the basis for the work and effectiveness of crisis management itself.

## **6. EMPLOYEE TRUST IN CRISIS MANAGEMENT**

Trust as a concept is studied within various scientific disciplines, such as psychology, sociology, philosophy and economics, and especially management, most often in the context of crisis management and how much employees actually trust crisis management experts when stressful, unpredictable and sudden situations occur (Đukić, 2020). It is this multidisciplinary approach to the study of trust that has resulted in a wide range of knowledge about trust, but also causes great confusion about the conceptualization of the phenomenon of trust (Podrug, 2011 according to Đukić, 2020). One of the most commonly used definitions (Došen, 2015 according to Đukić, 2020) is that trust is the willingness of one party to expose itself to the activities of the other party based on the expectation of certain activities that are relevant to the one indicating the trust, regardless of whether there is a possibility of monitoring and /or the controls of the person indicating the trust. In other words, trust represents the acceptance and appreciation of the trustee's own sensitivity, and making it available to others, whereby the focus is placed on the positive expectations of other people and situations, along with the willingness to take risks (Brčić et al., 2013). However, the question arises as to how feasible the above is at all and whether there is any generally valid pattern that can be used to build trust within the organization, i.e. a kind of recipe for gaining employee trust in crisis management (Đukić, 2020, Glavaš, 2021). One of the "recipes" that should definitely be applied is effective communication, which implies the transmission of the entire and unchanged message from the sender or source of the message, which in this case is the crisis manager, to the recipient, i.e. the employee of the organization, with the condition that there is no, or minimal, noise in the communication channel that violates the integrity of the message itself, and thus destroys communication (according to Đukić, 2020). Within the mentioned "recipe", motivational, perceptual and experiential communication barriers can arise between crisis management experts and employees, which then represent a possible danger and lead to organizational

ineffectiveness, which is primarily reflected in the failure to achieve basic business goals (Đukić, 2020). Organizational effectiveness is directly influenced by the quality of communication at all levels of the organization, and dialogue represents the basis of action and the basis for building the previously mentioned trust. So, without quality and dialogic communication, there is no trust - from employees to crisis management experts (and vice versa) - (Brčić et al., 2013, Đukić, 2020).

## **7. PHASES OF CRISIS COMMUNICATION**

It should be noted that the below-mentioned stages of communication can be applied at the level of the entire state (and not only at the level of organization) and how the top of the state and the National Headquarters of Civil Protection communicate with the nation and how they build (dis)trust in it ( Azinović , 2016). Some of the basic principles of crisis communication are as follows ( Coombs , 2007 according to Đukić, 2020):

- 1) Take control and communicate - avoid silence or the phrase "no comment" because often when an organization does not communicate, the public may suspect that it is hiding something, and the media in those moments turn to unverified sources to get certain information
- 2) Present information clearly – which can be avoided by avoiding technical terms or jargon. Due to the lack of clarity in communication, the public may suspect that the organization is deliberately trying to confuse them in order to cover up something.
- 3) Appear confidently in front of the media - a crisis management specialist must make eye contact and avoid nervous gestures such as fidgeting or moving around, since our body language greatly affects the way the audience perceives us and what kind of first impression they will get about us.
- 4) Acquaint all crisis managers in a particular organization, region, or generally speaking, in the country with the most up-to-date information about the crisis and key messages and information.
- 5) Acquaint employees with the crisis and crisis activities - apart from the fact that it will be useful for employees to know how the crisis situation will affect their work in the organization, they can also represent an additional information channel to the public.
- 6) Show concern – It depends on how much of a role the organization played in the crisis, and to what extent people or their property were damaged. Generally speaking, failure to show concern can harm an organization.
- 7) Provide support to victims of crisis - depending on the type of crisis, the organization can in certain cases do more than show concern, that is, it can offer victims and their families psychological counseling due to the stress or trauma suffered. Also, the organization can help its employees materially, for example, financial assistance is extremely useful in case of major damages due to natural disasters, difficult family situations, diseases, earthquakes and pandemics.

## **8. TYPES OF COMMUNICATION**

During the communication that takes place between the crisis headquarters and employees (or, in a broader sense, the nation), two basic types can be practiced ( Azinović , 2016). Internal communication can be defined as a process of information exchange between people at different levels or internal participants in the organization ( Businesscom , 2016, according to Azinović , 2016). It is considered crucial in encouraging the participation of employees in solving the crisis and is an unavoidable step considering that it is not desirable, regardless of the crisis, not to inform the employees about it. Even more, if information is deliberately not disclosed to employees, it causes great frustration among them ( Camillera , 2001, according to Azinović , 2016).

However, it should be emphasized that this does not mean that absolutely every piece of information must be shared with all employees of the company. The task of crisis management experts is to determine what information should be "released" to the public and what should not (Azinović, 2016, Đukić, 2020). On the other hand, external communication represents the exchange of information and messages between the organization and other organizations, groups or individuals outside its formal structure (Azinović, 2016). For external communication, it is possible to use tools such as the telephone, face-to-face conversations, mass communication (for example, printed or electronic editions of newspapers, radio, television, etc.), the Internet, e-mail, social networks, and more (Đukić, 2020). It should be two-way and interactive, sensitive to the requirements of the organization and its stakeholders, objective, clear, accessible to those for whom it is intended, and the content and form of the message should strengthen mutual trust and cooperation (Azinović, 2016).

## **9. THE REPUBLIC OF CROATIA'S RESPONSE TO THE COVID-19 CRISIS**

Not long after the COVID-19 pandemic began to spread around the world, very quickly, in the middle and end of March 2020, the first cases began to appear in the Republic of Croatia (Mikac, 2020). Croatia met the first phase of the pandemic very well - it recognized its risk precisely because of the awareness that the virus can very quickly get out of control, and the pandemic can turn into an event of catastrophic proportions. Precisely because of the above, the general closure (lockdown) of the Republic of Croatia is introduced - massively introduced in countries around the world as part of stopping the spread of the virus - which represents a big blow to the economy of the Republic of Croatia (Mikac, 2020). As a result of the closure of the state and national borders, during the first wave of the pandemic, Croatia became one of the successful countries in Europe in terms of the fight against COVID-19, with a very low number of cases and a low number of deaths (Marković, 2020). Also, the situation was almost completely under control during the summer, however, at the end of the summer, the number of cases starts to increase, due to non-compliance with the measures and the numerous tourists who were staying in the Republic of Croatia at that time (Mikac, 2020). Therefore, at the end of the summer and with the arrival of autumn comes a second, more deadly wave that breaks daily records during autumn and winter and again disrupts the functioning of all spheres of social and public life. At this stage, in order to save the economy, there is no new lockdown, which results in a huge increase in cases and the adoption of measures that did not bring much effect. The third wave that affected the Republic of Croatia in the spring took fewer lives than the winter one, but it still caused the disruption of the entire system (according to Mikac, 2020). Throughout this situation, it is important to mention the activities of the Civil Protection Headquarters of the Republic of Croatia, which, as the main health institution in the Republic of Croatia, had the task of reacting effectively and quickly to the unpredictable situation with the virus, adopting measures with regard to its speed of spread, existing variants, time of year and other factors. They also brought guidelines that the nation should adhere to in order to reduce the spread of the virus - wearing masks, maintaining physical distance, regular disinfection of spaces, prohibition of gatherings. Also, at the very beginning of the pandemic, as part of the crisis headquarters, the Republic of Croatia analyzed how many respirators, medical equipment and beds are available in hospitals at the county and state level. Since the situation with the available equipment was not satisfactory, the crisis headquarters received donations, part of the equipment was purchased, and part is starting to be produced on the territory of the Republic of Croatia, especially masks and other protective equipment. It should be mentioned that, in addition to the Civil Protection Headquarters, the Ministry of Health, the Croatian Institute for Public Health and the entire hospital staff played a very important role (Kranjčević, 2020 according to Mikac, 2020). Although crisis management responded well to the health threat of the pandemic in the first months of the pandemic, financial, economic and

tourism management did not adequately respond to all challenges, nor did they have concrete plans or knowledge on how to "get the business back on its feet" after such an unexpected disruption (according to Mikac, 2020). It is believed that, in addition to the crisis management that dealt with the health aspect of the pandemic, one should have been established for the previously mentioned issues, however this remained only an idea (Vuković, 2020).

## **10. THE EUROPEAN UNION'S RESPONSE TO THE COVID-19 CRISIS**

The European Union reacted quite late and inadequately to the spread of the pandemic - instead of preventively, it decided to react restrictively and impose restrictions that greatly affected people's private, social, business and educational life (Marković, 2020). The magnitude of the threat of the pandemic was underestimated, as acknowledged by the President of the European Commission, Ursula von der Leyen (Bild, 2020 according to Mikac, 2020). Although the pandemic initially started to flare up in Italy, it is believed that the European Union should have reacted already then and offered more help and worked on as much "rehabilitation" of the virus as COVID-19 quickly "exited" from Italy and started to ravage Europe across borders (Marković, 2020, Mikac, 2020). When the pandemic affected the whole of Europe and when it was wonderful for an approach that would keep the virus outside the borders of each of the European countries, they decide to react in the same way as was explained earlier with the Republic of Croatia - national or regional lockdowns are introduced, masks are worn, physical distance is maintained, border crossing is prohibited, gatherings are prohibited and many spheres of social and public life are closed (according to Mikac, 2020). Overall, Europe did not cope in the first weeks of the pandemic and its response to the pandemic, according to Ursula Von der Leyen, should not serve as an example to other countries of the world (Janse, Tsanova, 2020). Namely, the approach that Von der Leyen describes as "my country must be first" where each country focused only on itself and that it has more than enough medical equipment, even if some other countries do not, is something that he strongly condemns. However, he believes that Europe is learning quickly and that after the initial panic it was quickly realized that the previously mentioned approach cannot work and that it is not an example of solidarity and humanity (Janse, Tsanova, 2020) and European countries are very quickly uniting together against the pandemic so that all together saved lives, jobs and companies, small and large (Mikac, 2020, Janse, Tsanova, 2020).

## **11. CONCLUSION**

In order for crisis management to work successfully, it is important to think calmly few steps ahead and to see how the organization (or state) will be able to get out of the crisis that hit it most effectively (Janse, Tsanova, 2020). It should be noted that the COVID-19 pandemic is something that no one was prepared for, so the first wave destroyed many companies and led to the collapse of even the world's largest economies (Mikac, 2020), however, as time went on, the system slowly learned to deal with pandemic and all the challenges it brings, and they learned how to use their potential to the maximum despite being "suffocated" by the pandemic (Mikac, 2020). It should be noted that the above applies to highly developed countries that have the professional staff, finances and abilities to achieve the above. Unfortunately, in poorer countries, crisis management has not been so successful. It is important to say that the key to success in resolving the crisis lies in a joint approach to problem solving and effective, internal and external communication, without overemphasizing the authority or showing the power of managers over employees (Đukić, 2020). Every manager must support his employees, and every head of state must support his nation. This is the only way to successfully resolve a crisis, even if it is of a global scale, such as the crisis of the COVID-19 pandemic.

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# BALANCED SCORECARD - APPLICATION OF THE CONTROLLING TOOL IN A NON-PROFIT SPORTS ORGANIZATION

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## **ABSTRACT**

*Nowadays, non-profit organizations focus is focusing on the importance of active and quality management in order to gain sustainability in their primary task such as achieving social good and benefits in public life. Controlling, as one of the functions of management, dominantly imposes itself by following management subtly, logically connecting all processes from planning, through strategy to goal. Controlling means teamwork, coordination of all functions interconnected and interdependent, knowledge of the processes that will be arranged opening the way to the requirements of the market and client, taking a step forward and gaining a competitive advantage. The Balanced Scorecard is a harmonious and objective controlling tool that guides modern management towards goal and success. It puts the output in relation to all activities undertaken within the most important aspects of business and operations. Balanced scorecard balances and measures goals through four aspects: financial, user aspect, process and learning and development shows and opens the way to non-profit management to long-term, financial stability, strategic achievement and more realistic goal achievement. Being non-profit, acting and doing business for the common good does not diminish the need to measure performance through balance to strategic effects.*

**Keywords:** *balanced scorecard, controlling, management, non-profit organizations, strategy*

## **1. INTRODUCTION**

The intention of this paper is to show how controlling in small non-profit organizations is indispensable and one of the key functions of management. Controlling that will use the Balanced Scorecard tool to gain the goals of the sports non-profit organization on the journey from plan to goal, following the strategic guidelines set according to the mission, vision and goals of the organization. The role of non-profit organizations in social life is extremely important and although the non-profit organization does not aim for profit, it is certainly a successful social action with the aim of developing and improving society as a whole through a balanced business. Non-profit sports organizations, precisely because of the sources of financing, which is very often of a budgetary nature, must show a special responsibility dimension within which confirmation of success, often excellence, is required. Within the social dimension, it is also necessary to carefully plan each step, organize activities, implement a strategy in line with the mission, and to monitor, correct and direct activities towards the set goal. It is very important to set the way of measuring performances, to balance and synchronize all functions and tasks as a whole to achieve the goal. This paper highlights a Balanced Scorecard as very simple, rational, practical, easy to use and objective tool that any management can use, even a small non-profit sports organization. Actually, it is completely easy to understand the Balanced Scorecard - organized on the basis of a strategic map of the most important aspects or perspectives on which the success of a non-profit organization depends. Measuring the success of the ongoing processes non-profit organizations are able to follow the success of turning strategy into action.

## **2. MANAGEMENT OF NON-PROFIT ORGANIZATIONS**

The management of non-profit organizations is characterized by social management, social responsibility for processes that are for the common good. In economic terms it means the realization of surplus income over expenditures, but without the possibility of distribution to

stakeholders, just exclusively reinvestment in the main activity. The main source of financing is most often the budgetary funds such as state, regional and local budgets, donations, membership fees, sponsorships and some economic activity. The success of the organization is influenced by associates, clients, the public and as measures of business success are the level of operationalization of the mission and success in achieving goals. However, even with such characteristics of management different from for-profit organizations, it is necessary to be an active, professional and skilled. According to Anheier (2000: 8.9), nonprofits are more complex because of multiple goals that require different managerial styles and approaches. The reason for this lies in the constant demands of the market, global and very dynamic environment, the demands of social needs and it is necessary to undertake quality, knowledgeable management, organize and implement activities for stable, long-term and successful development of the organization. It is necessary to improve jobs, develop new skills, abilities, new products and services in the non-profit sector that strengthens civil society. The management of non-profit organizations insists on setting and defining the goals of the organization that must be operationalized, their implementation measured and evaluated in order to achieve the result. In non-profit organizations where profit is not the goal, specific parameters and standards that represent the performance of the organization arise from the basic mission of the organization. It is in this managerial strategy management network that the important function of management is controlling - to connect and crystallize the area of performance in the non-profit management zone.

### **3. CONTROLLING NON-PROFIT ORGANIZATIONS**

"The manager must ensure the realization of the strategic goal" (Luković and Lebefromm, 2014: 20) in a positive way and with a good result" (Luković and Lebefromm, 2014: 16). "Controlling is a process that arises as a result of coordinated joint efforts of management (individual or team) and the controller, in order to achieve the set goal of the business entity" (Luković and Lebefromm, 2009: 5). Luković and Lebefromm (2009: 6) believe that by harmonizing and adapting to external and internal changes, controlling is directed towards increasing the efficiency and effectiveness of the system while shaping itself in a way:

- that it is narrow, oriented and focused (on the problem), way of thinking and working,
- to be fully oriented and focused in thinking and working on the realization of the set goal of the company,
- to be fully oriented in thinking and working towards the creation of the company's profit, with the assumption of ensuring long-term successful business,
- that it is focused in thinking and acting towards the future of the company.

Given the basic characteristics of controlling, it can be said: "Controlling is a concept of leadership, which is oriented to the bottleneck, goal, benefit and future of the company" (Luković and Lebefromm, 2009: 7). Controlling in nonprofits aims to define and determine effectiveness based on specific performance indicators. Given the socially important activities of non-profit organizations, it is necessary to monitor their success, efficiency and effectiveness in which the holders of responsibility are involved. Controlling should primarily form a basic platform for its activities, i.e., to penetrate the specificity and specificity of the non-profit organization, its mission and character. It achieves this by formulating goals, operationalizing goals, and making strategic decisions. The main role in controlling belongs to the controller. "The controller is the task holder who contributes to the successful decision-making and work of management in solving the problem of adjustment and coordination on the way to the realization of the business goal." (Luković and Lebefromm, 2009: 26). The controller's task is to take care of the transparency of strategy and business results, finances and processes.

The goal of the controller is an efficient information system within which information is properly understood and used efficiently and effectively. The task of the controller is to shape managerial processes in goal setting, planning and monitoring, so that decision making is the result of defined processes, recorded results, preparation and revision of plans. The conclusion is that the controller and the manager are inseparable partners. Controller to Controller Verein (Controller Club) is a partner who finds and achieves the path to the goal. He supports managers and relieves them by taking on tasks, points out the right decisions, is a consultant who supports the manager by bringing process transparency, competence for methods, impartiality and above all responsibility. The controller is future-oriented and based on past data knows exactly what process and how to take to keep the organization one step ahead of the competition.

#### **4. BALANCED SCORECARD – A CONTROLLING TOOL: STRATEGY TOWARDS THE GOAL – ON THE EXAMPLE OF NON-PROFIT SPORTS ORGANIZATION GYMNASTICS CLUB MARJAN**

"Balanced list of performance indicators Balanced Scorecard, BSC according to Bahtijarević - Šiber et al. (2008: 302) means a list of financial and non-financial indicators of organizational performance that an organization monitors in order to determine its performance based on their value." (Marić I., 2018: 191). Balanced scorecard enables efficient performance measurement and successful implementation of the strategy, all in order to increase the value of the organization and fulfill its mission. When defining the Balanced Scorecard, the most important thing is to focus on the organization's mission and redirect the organization's strategy to performance measures. The goal of the management is to connect the strategy with the measures for the realization of the strategy, and the Balanced Scorecard will work out the operationalization of the set strategy through four key areas. All four key areas will provide an answer to the question of what is to be achieved? As an example, in the application of the controlling tool of the Balanced Scorecard, this paper shows the non-profit sports club Gymnastics club MARJAN, which has implemented proactive and dynamic management in order to fulfill its mission and vision and achieve strategic goals. The main activity of the Gymnastics club MARJAN is artistic gymnastics of all categories on both recreational and competition levels. "The mission of the Gymnastics Club MARJAN is to implement and apply the best practices, knowledge and experience gained in cooperation with leading gymnastics leaders with the aim of achieving the highest standards of development of gymnastics in the city of Split and the Republic of Croatia." ([www.gkmarjan.hr](http://www.gkmarjan.hr)). With the vision, the club expresses the future, what the club wants to become, the outcome it wants to achieve. "Our vision is to be a recognizable gymnastic club that hold a significant place in the sports of the city of Split and the Republic of Croatia through sports activities and exemplary behavior, creating athletes of interest, importance and pride to the community. At the same time, systematic work, applied innovations, continuous improvement and education are the basic starting points of our vision." ([Www.gkmarjan.hr](http://Www.gkmarjan.hr)). For the strategy, the MARJAN Gymnastics Club has chosen a strategy of differentiation whose aspiration is excellence and a recognizable value chain. "Differentiation should offer customers something unique and particularly valuable to them that other industry providers cannot offer" (Porter, 1985: 119). According to Luković and Lebefromm (2009: 38), this is a very functional method in the management process within which four fundamental ones are formed, which will show interdependence and conditioning through the set goals. Each aspect can be understood as a choice of goals and indicators of management success, but it can also be understood as a measure of systematization and as the formation of the basic values of measurement and management. Aspects or perspectives are: financial aspect (perspective), client aspect, internal process aspect and learning and development aspect. Based on the defined aspects, a strategic map is created, which is "actually a tool that helps to define, visualize and describe the strategy, and the process

interdependence of the defined key performance indicators. In this way, the Balanced Scorecard goes a step further into the depths of understanding critical business processes. The strategic map is nothing but a series of houses divided into four perspectives, interconnected by arrows that define interdependencies.” (Oreščanin D., 2006). The strategic map communicates very clearly and understandably with all stakeholders of the organization, showing the interdependence of the most important and fundamental aspects of the organization. Transparency in the strategic map shows the execution of the strategy and success in achieving the goals of the organization. The strategic map with the measures of BSC Gymnastics Club MARJAN shows the connection and interdependence of all aspects: increasing the number of new users will result in business efficiency, increased revenue that will strengthen the aspect of internal processes in terms of modernization gymnastic equipment, higher revenues will enable education and new licenses for gymnastic sports. A stronger aspect of learning and development with all its segments will lead to new customer services and strengthen the customer aspect through their satisfaction, loyalty to the club, and more dynamic activity and greater demand for club services will increase the financial aspect and successively all other aspects. "Strategic maps are an important tool in defining strategy, which is the first, inevitable and vital step towards achieving and measuring success. The strategic map defines the goal we are striving for and the path we need to take, and the balanced scorecard is a scoreboard that tells us how fast we are going and how far we have come.” Oreščanin, D. (2006) A strategic goal map is the basis for creating a company's BSC. It usually consists of 20-40 goals arranged in four perspectives and interconnected by cause-and-effect relationships. The level of achievement of these objectives is measured by an equal or greater number of measurements instruments whose relationships are aligned with the cause-and-effect relationships of the objectives. Lončarević, M. (2006)

According to Lončarević (2006) the steps in creating a strategic map are:

- Collect and analyze the necessary information,
- Develop business strategies,
- Develop goals and their purpose for each BSC perspective,
- Make sure that all interactions and connections between the four perspectives are defined,

Each of the perspectives has specific goals that need to be achieved, but also interconnected since a good result of one goal has a positive impact on other goals. If one goal cannot be related to another, then such a goal must be removed or must be analyzed in more detail. Below is a strategic map with BSC measures in the year of 2021 for the MARJAN Gymnastics Club.

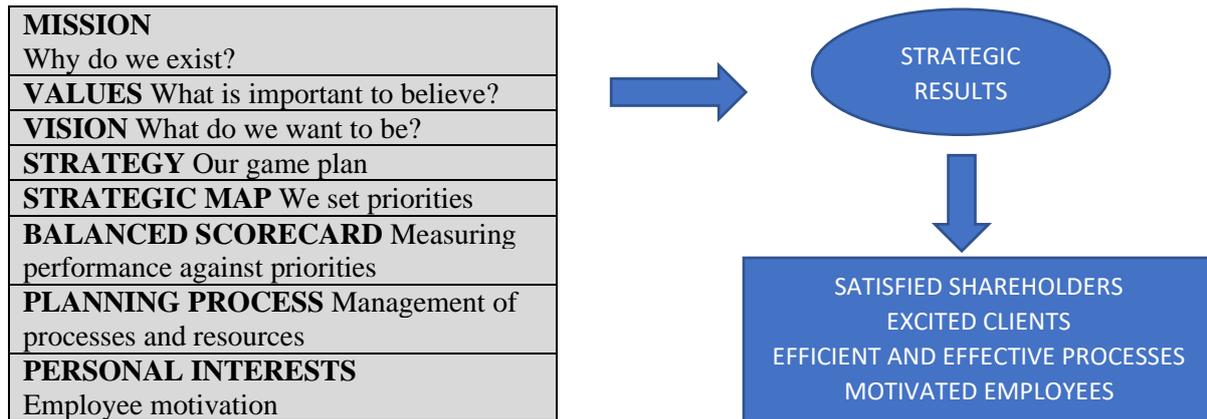
*Table following on the next page*

1. FINANCIAL ASPECT	TARGET	MEASURE
Reliability of own sources of income	Increasing own sources of income	The ratio of realized and planned own income
Reliability of budget revenues based on public needs	Increasing budget revenues	The ratio of planned and realized revenue from the budget
Increase in total revenue	Increase in total revenue	Excess revenue
Business economy	Increase revenue over expenditure	Excess revenue over expenditure
2. CLIENT – USER ASPECT	TARGET	MEASURE
Customer satisfaction - users (athletes)		Satisfaction rate
Loyalty to the club	Generational affiliation to the club	Number of members who target the club
Satisfaction with sports results	Increasing interest in gymnastics	Number of users interested in gymnastic sports
Increasing consumer power	Increasing the membership fee for programs	Price for programs 270.00 to 350.00 Kn
3. INTERNAL ASPECT OF PROCESSES	TARGET	MEASURE
Modernization of gymnastic infrastructure	Procurement of modern licensed gymnastic equipment and props	Introduction of modern achievements through the number of introduced devices and props
New customer service	New programs on offer	Number of new programs (out of competition)
Number of new clients-users, athletes	Enrollment in new programs	Number of new entries
Increasing employee satisfaction	Motivation, stimulation, rewarding	Increased compensation + rewards for employee achievements
4. LEARNING AND DEVELOPMENT ASPECT	TARGET	MEASURE
Number of employees	Increasing the number of employees	Total number of employees
Employee education	Educational seminars and workshops	Number of employees who are additionally educated
Number of employees with a university degree	Increasing the number of employees with a university degree	Number of employees with a university degree
Number of licenses acquired in gymnastics	Specialist education for licensing in gymnastic sports	Realized number of specialist licenses

Table 1: Strategic map with bsc measures in 2020 for gymnastics club Marjan  
 (Source: Author according to the source Gymnastics club MARJAN, 2021. and graduate thesis 2020)

The Balanced Scorecard has proven to be an unmistakably effective and very easily communicative controlling tool allowing to increase the value of a non-profit organization by enabling efficient measurement of strategy performance and of course successful strategy implementation. BSC opens a picture of business and the state of all aspects, each of which has a huge importance for the organization and improved, empowered and achieved complements each other with other aspects. What is extremely important is that the BSC talks about the established balance that every organization wants to establish in the long term. The following figure shows the reasons for applying the Balanced Scorecard method.

Table following on the next page



*Table 2: Reasons for applying the balanced scorecard method  
 (Source: Adapted by the author of the paper, according to Čerović 2011: 8)*

The business result in the Gymnastics Club MARJAN was measured on the basis of set goals. In order to determine the final achievement of the club, a way of measuring the achievements in 2020 in relation to the previous 2019 was set, which is a growing trend compared to the previous 2020. In this way, the club is encouraged to progress in future periods. The strategic achievement is the improvement of all results compared to the previous year, and the differences between the target and the achieved are expressed as a percentage and give the final result. Each goal is accompanied by a measure and for each measure, scores are used. The range of grades for each measure is determined by a scale of 1 - 10. A score of 5 means 100% complete fulfillment of the goal. A score of 1 to 4 means achieving below the level of the planned goal of the result. A score of 6 to 10 means achievement above the planned goal.

Achievement %	Mark
Under 69 % (under -31%)	1.0. – 1.9
70 % - 80 % (from – 21 % to -30%)	2.0. – 2.9.
80 % - 90 % (from -11 % to -20%)	3.0. – 3.9.
90 % - 99 % (to- 10%)	4.0. – 4.9.
100 %	5.0
101 % - 110 % (to +10%)	5.1. – 6.0.
111 % - 120 % (from +11% to +20%)	6.1. – 7.0.
121 % - 130 % (from +21% to +30 %)	7.1. – 8.0.
131 % - 140 % (from + 31 % to +40 %)	8.1. – 9.0.
Over 140 % (from + 41 % further)	9.1. – 10.0

*Table 3: Assessments of the achievement model  
 (Source: Deni Borozan, graduate thesis 2020)*

Furthermore, between the two grades for each percentage of the result, 0.1 point is added or subtracted from the grade, so the evaluation is performed as shown in the table in the following figure.

*Table following on the next page*

Achievement %	Mark
101 %	5.1
102 %	5.2
103 %	5.3
104 %	5.4
105 %	5.5
106 %	5.6
107 %	5.7
108 %	5.8
109 %	5.9
110 %	6.0

*Table 4: Scores range from 101% to 110%  
 (Source: Deni Borožan, graduate thesis 2020)*

When evaluating, the intensity is determined for each individual measure and the sum is 100%. The weighted assessment of the measure gives the result of the achievement in a certain aspect. The weighted assessment of all areas together determines the overall achievement in relation to the measures. The following figure shows the table of Balanced Scorecard with the achievements of all aspects as well as the total achievement of the Gymnastics Club MARJAN in 2020 compared to 2019 with a plan to increase achievements in 2020 by 10% in some aspects in accordance with strategic goals, the mission and vision of the club as well defined by the strategy of differentiation. The overall achievement is the result of the set measures and points. The BSC table shows the strategic achievement of the financial aspect focused on individual and totally different types of income that the club generates. The club's own revenues are extremely important and the impact of this indicator in the overall aspect is 40% because its own revenues gain its independence and integrity. In 2020, the club achieved 2.32% compared to the planned goals in 2020, but 12.56% more than in the previous 2019, which shows that the strategic plan for achieving this part of the aspect is being achieved, even exceeded. Achieving the club's sports result leads to an increase in budget revenues that is exceeded compared to the planned increase of 10% by 35.53% and 49% compared to the previous year. This financial indicator of reliability and increase in budget revenues shows the sport achievement of the club, which with its sports results and successes ranked the club in a higher position of community interest and contributed to increasing the budget with budget funds. Furthermore, in the financial aspect, it can be seen that total revenues increased by 13.03% compared to the plan, but by 24.32% compared to 2019. The cost-effectiveness of the club's business shows whether in the future it will operate with a surplus of income over expenses, which will enable it to reinvest in sports activities and thus further prosperity. The economy of total business is the ratio between total income and expenses. If the value of this indicator is greater than 1, a profit is made. Otherwise, the club records a loss. The result of the club's business efficiency in 2020 is 1.25, which is an increase in achievements compared to 2019, which means that the club generates more total revenue per unit of total expenditures. The total number of points for the financial aspect is 6.26 and with a 25% share in the overall BSC is the result of an advanced 1.6. The next aspect in BSC is the user aspect to which the club gives a significant impact value of 30% of the total value. The reason for this lies in the fact of a differentiation strategy that is precisely focused on the quality and excellence of the programs that the club addresses to its users. The club obtained the necessary information on the number of users by aspects through a survey. In this aspect, there was no increase in the number of users due to the justified reason of maximum occupancy of the existing capacities of the space in which the club operates. The table shows the strategic plan to stay at the same number through three sub-aspects, which was further assessed by the success parameter (because the number of users did not decrease), while

in one aspect users who are satisfied with the achieved sports results are planned and increased to the maximum number of user capacities. The user aspect totals 5.09 and ultimately carries BSC 1,527 points. In the internal aspect of the process, the club has made significant progress. The strategic plan in 2020 was to double the number of new modern devices, and the end result is an achievement of 2.5 times more than planned, or 500% compared to the previous 2019. In this sub-aspect, the connection of the increase of the financial aspect, which resulted in the increase of the modernization of devices, is noticed. The number of new users remained at the same number due to the impossibility of increasing capacity, but did not decrease, which is very important and was rated 5.0. The sub-aspect of increasing employee satisfaction increases by 160% compared to the planned, or 178% compared to the previous 2019. Here, too, it is concluded how much the increase in the financial aspect has affected the increase in employee satisfaction through additional compensations and rewards. The total internal aspect of the process is 1,875 points. The last aspect of the Balanced Scorecard is the learning and development aspect in which the club has also achieved a strategic goal. The total number of employees exceeded the planned goal and increased by 25% compared to the planned, which is 43% compared to the previous 2019. Higher education was also achieved, so 6 people were more educated than planned and a total of 7 compared to 2019. In this segment, it is important to know that the increase was due to the abolition of epidemiological measures due to the pandemic caused by the covid 19 virus, so opportunities opened up for physical gatherings and joint activities and education. The number of employees with a university degree increased by 2 compared to the planned, which is an increase in the number of professionals by 3 persons compared to 2019. A very significant increase is precisely the number of specialist licenses in gymnastics, 5 more than planned in 2020, or 6 more licensed people compared to 2019. The Balanced Scorecard of the club showed that the club achieved strategically set goals in 2020 compared to the planned through improving the achievement of all aspects as well as through the overall achievement of 36.6% more than in the previous 2019. The conclusion of the controlling that is passed on to the management is that the club successfully implements the strategy that results from the mission and vision of the club, which results in increased and improved results and effects.

*Table following on the next page*

GOALS	INDICATORS	Achieved in 2019	Target values 2020	Achieved in 2020.	Diff. +/-	Mark	Impact of indicators	Points	Impact of the area	Total points
<b>1. FINANCIAL ASPECT</b>										
Reliability of own sources of income	Ratio of realized own income	596.981,00 Kn	656.679,10 kn	671.884,00 kn	2,32%	5,2	40%	2,08		
Reliability of budget revenues	Ratio of realized income from the budget	356.809,00 Kn	392.489,90 kn	531.951,00 kn	35,53%	8,6	20%	1,72		
Increase in total revenue	Ratio of realized total revenues	953.790,00 Kn	1.049.169,00 kn	1.185.835,00 kn	13,03%	6,3	20%	1,26		
Business economy	Ratio of total rev. and expenditures	1,04	1,14	1,25	10%	6	20%	1,2		
<b>TOTAL FINANCIAL ASPECT</b>							<b>100%</b>	<b>6,26</b>	<b>20%</b>	<b>1.252</b>
<b>2. CLIENT - USER ASPECT</b>										
Customer satisfaction with sport programs	Demand for programs capacity utilization	240	240	240	0	5.0	30%	1,5		
Satisfaction with the achieved sports results	N. of users satisfied with realized sports results	233	240	240	3%	5.3	30%	1.59		
Satisfaction with the price of the service	Number of users satisfied with the price	240	240	240	0	5.0	20%	1		
Loyalty to the club	Number of users loyal to the club	223	223	223	0	5.0	20%	1		
<b>TOTAL CLIENT - USER ASPECT</b>							<b>100%</b>	<b>5.09</b>	<b>30%</b>	<b>1.527</b>
<b>3. INTERNAL ASPECT OF PROCESSES</b>										
Modernization of the gymn.equipment	Number of modern apparatus introduced	2	4	10	250%	10	25%	2.5		
New customer service	Number of new programs	3	3	3	0	5.0	25%	1.25		
Total number of new users	Number of new users	240	240	240	0	5.0	25%	1.25		
Increasing employee satisfaction	Increased compensation-rewards	45.000,00 kn	50.000,00 kn	80.000,00 kn	160%	10	25%	2.5		
<b>TOTAL ASPECT OF PROCESSES</b>							<b>100%</b>	<b>7.5</b>	<b>20%</b>	<b>1.5</b>
<b>4. LEARNING AND DEVELOPMENT ASPECT</b>										
Number of employees	Total n. of employees	7	8	10	25%	7.5	25%	1.875		
Employee education	Total number od educated employees	3	4	10	250%	10	25%	2.5		
N. of employee with master degree	N.of employees with tthe master degree	5	6	8	34%	8.3	25%	2.075		
N. of employee with special licences	Realized n. of special licences	2	3	8	267%	10	25%	2.5		
<b>TOTAL LEARNING AND DEVELOPMENT ASPECT</b>							<b>100%</b>	<b>8.95</b>	<b>20%</b>	<b>1,79</b>
<b>OVERALL ACHIEVEMENT</b>		<b>5.783</b>						<b>100%</b>	<b>6.069</b>	

Table 5: Balanced scorecard - gymnastics club Marjan 2020 - measuring performance in relation to strategic goals

(Source: Archive of the Gymnastics Club MARJAN and Deni Borozan, graduate thesis 2020)

## 5. CONCLUSION

Managers need to deal with concrete decisions and actions. In order for the management to function as proactive, efficient and effective, in order to achieve the given goal, controlling is taken care of. Controlling as one of the most important functions of management becomes his partner who monitors, analyzes, concludes, reports, which makes him the organizer of the system that leads the organization towards the goal. Controlling at the MARJAN Gymnastics Club using a strategic map and a balanced scoreboard with the Balanced Scorecard illustrated coordination at all levels by integrating all aspects of business into harmony. What is important to emphasize is that such harmony is in touch with the vision and mission and is balanced towards the goals of the organization. The BSC clearly shows how controlling encourages management to shape, review, and execute goals. All information along the way is received, recorded and analyzed in a timely manner and used for interpretation so that management can make relevant decisions. The Balanced Scorecard covers everything and looks ahead based on the past, into the future, towards the end result. The BSC structurally networks the links between the strategy and the operations required to implement the strategy. The measured indicators show the logical connections of the causes and consequences of all relationships, balance the entire club system and harmoniously complement it. The strategic map, which becomes a model in key operations, engages all the elements and moments in a non-profit organization and it becomes a unique language of communication of the operation and strategy, which is the only correct and successful way to the goal.

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## TERRORISM AS A PRETEXT FOR WAR? CASE STUDIES OF UKRAINE, PALESTINE, CHECHNYA AND NORTHERN IRELAND

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### **ABSTRACT**

*With almost 400 circulating definitions, terrorism remains to be a rather ambiguous and undefined term. Nevertheless, in a narrow sense terrorism can be considered as an attempt to obtain political goals by using fear and violence. The aim of terrorism is to generate a state of fear which would indirectly force the government or other subject to a political concession. War in its simplest form is a state of armed conflict between countries or different groups. Terrorism as a self-sufficient strategy and as a form of political violence is practised at internal and international political levels both in times of peace and war. In wartime circumstances, terrorism and war can occur as parallel phenomena, but the acts of terrorism can also be used as a part of wider military strategies. The definitional and practical differences are all more blurred because the matter of differentiation is also a subject of social construction, namely framing and counter-framing efforts of the opposing sides. Perpetrators of terrorist attacks often invest a substantive amount of effort to portray the struggle as war, while the opposing state counter-frames the opponent and its activities as terrorist and criminal. A number of groups that have been framed as terrorists by states have transitioned from the initial relatively low-level terrorist and guerilla activities to the state of full-scale war as well-equipped and organized armies, capable of conducting classical positional warfare against the armed forces and security services. Albeit unevenly, the transition of a state of conflict, image and the capabilities of adversaries are undoubtedly facilitated by discursive politics, structural constraints and availability of resources at local, national and international levels and as such require synoptic analyses. Even during peacetime conditions, the number of victims and extent of violence can create a "state of war", however, the aim of the study is to explore which processes and situational conditions lead from terrorism to classic conventional international or civil war. In the first part of the analysis, the authors shall compare definitions of the two concepts and determine the theoretical differences. In the second part of the paper, the authors shall analyse four case studies of terrorism which have emphasized ethno nationalist characteristics, namely the cases of terrorism in Northern Ireland, Ukraine, Chechnya and Palestine. Besides the ethno-nationalist component, to a greater or lesser extent, the aforementioned cases bear a religious component as well. By conducting a comparative analysis of the case studies, the authors shall assess which determinant factors have allowed for the transformation of conflict from a state of terrorism to a state of war, respectively, when is terrorism a pretext for war.*

**Keywords:** *Chechnya, Northern Ireland, Palestine, terrorism, war, Ukraine*

## 1. INTRODUCTION

War and terrorism are multiple complex social phenomena. Their mutual relationship is perhaps even more complex. Terrorism is often portrayed as a form of war or warfare, as a continuation of war by political means, as a totalitarian form of war and politics that breaks the war convention and political code (Kaffes, 2018; Casaca, 2017; Schinkel, 2015; Walzer, 1977), while war, as evidenced by the international security practice of the 21st century, is used in the fight against terrorism (War on Terror). Contemporary security practice also testifies that a terrorist act can be viewed both as a criminal act and an act of war. In a series of declarations and resolutions, the General Assembly and the UN Security Council, changed their position on the qualification of terrorism as a criminal act or an act of war. The relative consistency in qualifying the term was abandoned after the Al Qaeda attack on the US in September 2001, which made the situation even more confusing. Resolution 1373 designated terrorism as a criminal act, confirming the right of states to individual and collective self-defense (an act of war) and to fight terrorism by all means in accordance with the UN Charter (Acharya, 2009). Traditional military classics and founders of the war theory defined war as the continuation of politics by other means (Clausewitz, 1997). Obviously, as an extension of such a definition of war, terrorism is defined as the continuation of war by political means or as the continuation of war by the means of anomie (Walzer, 1977; Kaffes, 2018). In examining the relationship between war and terror (terrorism), it is also convincing to consider the perspective which claims, that war is the terror of the rich and terror is the war of the poor (Todenhofer, 2016). The relationship between terrorism and war can be analyzed by comparing and applying theories and traditions of just war (just war doctrine), that attempted to morally justify war in certain circumstances and as such they date back to the 4th century. When we talk about theory, we mean the philosophical discussion about the justification of wars, and when we talk about tradition, we mean the legal rules that have been accepted throughout history (Buzar, 2020). The principles of just war were created in the 17th century, at the time of the creation of the first modern states, and are associated with the founder of international law, the Dutch jurist Hugo Grotius<sup>1</sup>. It is about the introduction of two universal principles related to war and morality. The *jus ad bellum* principle (justice of war, right to war) talks about when resorting to war is just, respectively, it talks about assessing whether resorting to the use of war, as a way of resolving conflicts, is morally justified. On the other hand, the principle of *jus in bello* (justice in war, law of war) refers to the guidelines on how to conduct a just war, respectively, it determines the tactics that are permissible and justified. Is the just war tradition applicable to terrorism? Even a superficial analysis clearly shows that certain elements of the theory are indeed applicable to cases of terrorism, some of which are explained in more detail in the following chapters in the analysis of case studies. While the elements of the principle of *jus ad bellum* (the objectives of terrorism) are very much fulfilled in a series of conflicts in which terrorism is a core element, analysis of the principle of *jus in bello* (terror as a means to an end) shows quite different results (Sussmann, 2013; Coady 2004; Nathanson, 2010). Political violence is an umbrella term that frames both war and terrorism. War and terrorism fall into types of political violence as extensions of political action or political protest (Whelan, 2016).

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<sup>1</sup> Of course, the rules of international law in reality do not apply to terrorism, which is considered an illegal activity. Scientists (Sussmann, 2013) and state leaders (Mary Robinson, former president of Ireland and UN Commissioner for Human Rights, see: Robinson, 2006) call for a reexamination of just war theories in relation to asymmetric conflicts and terrorism and the treatment of (counter)terrorism within the framework of international law, for example within the framework of crimes against humanity and rules on the protection of human rights.

Political violence refers to the deliberate use of power and force to achieve political goals ("World Health Organization", 2002). It is a violent act motivated by the desire, whether consciously or unconsciously, to achieve or retain political power. It is a form of violence linked to social structures. It differs from general violence by a specific political goal because violent action is aimed at achieving power and involves more collective rather than individual political actors. Collective political violence involves destructive/constructive attacks by groups within a political community against its regime, government or policies. Political violence includes a heterogeneous repertoire of actions aimed at causing physical, psychological and symbolic harm to individuals and/or property with the intention of influencing different social groups to affectively react to or resist political, social and/or cultural changes. It is defined as an episodic interaction between social identity groupings involved in an ongoing, processual relationship in which instrumental force is used which results in the death and/or injury of people (as cited in: Mahakul, 2014; Ruggiero, 2017; Bosi; Malthaner, 2015). The previously presented viewpoints in a very simplified way indicate the connection, but also the separate and mutual complexity of war and terrorism. The aim of this paper is to examine another aspect of the mutual relationship between war and terrorism. Namely, the aim of the paper is to investigate whether there is causality and correlation between war and terrorism. Specifically, do cases of terrorism lead to war; is terrorism a cause for war? The goal is also to determine whether there are elements of war in terrorism and/or elements of "war" in "terrorist". A comparative analysis of case studies will serve as the basis for researching the above hypothesis and determining the situational conditions and factors that transform the conflict from a "state of terrorism" to a "state of war": the Russian-Ukrainian conflict, the Palestinian-Israeli conflict, the Russian-Chechen conflict, and the Northern Irish conflict. But first, it is necessary to determine the basic concepts and answer the questions: what is terrorism and what is war?

## **2. ANALYSIS OF THE CONCEPTS**

*Terrorism*: Systematic scientific research on terrorism dates back to the 1970s when terrorism was recognized and acknowledged as a differentiated security threat in social reality and public discourse. However, to date, science and the profession have not agreed on a generic definition of terrorism. Almost 400 definitions of terrorism are present on the scene in scientific, public, institutional and professional discourse (Lucić, 2019). Therefore, the question is open: is terrorism an undefined or over-defined term? Terrorism is one of the most difficult terms to define in social, political, academic and professional discourse. The concept of terrorism is not a stable and fixed object of rational knowledge, but it is socially constructed. If terrorism is not objectively, coherently and consistently defined, then the determination of a phenomenon and behavior as terrorist can only be a matter of subjective labeling. Terrorism thus, is not an objectively, empirically identified phenomenon, but a socially constructed and historically contingent category of human behavior dependent on concrete circumstances, sociopolitical context and actor's intentions (Stampnitzky, 2013). Thus, the concept of terrorism does not have its own intrinsic essence, but it is a human (social) construct (Schmid, 2004). Definitional and other contentions and controversies within the social sciences about terrorism point to the conclusion that terrorism studies have analytical deficits and limitations. Is it even possible to produce objective knowledge about terrorism? Can terrorism, therefore, be understood if one cannot determine the meaning of a subject that represents the origin of every knowledge and/or opinion? The authors point out that it is an intrinsically ambiguous symbol (de la Calle; Sanchez-Cuenca, 2011), a concept shrouded in hollowness (Ramsay, 2015), the search for a "canonical definition" is a waste of time (Meisels, 2009), where defining terrorism is not only

unuseful, but it is rather impossible if the historicity and stability of the concept are seriously considered (Erlenbusch, 2014). The decades-old claims that a generic definition of terrorism has not been achieved simply because there is no definition that can fully cover all versions of terrorism that have appeared throughout history (Laqueur, 1987) remain resistant to refutation. The wide use of the term terrorism in different historical contexts prompted the authors (Richards, 2014) to ask whether the term is meaningless, whether the issue is a "definitional quagmire" and whether definitional failures are the cause of terrorism. Brian Jenkins, after all, has been calling the problems of defining terrorism the "Bermuda Triangle of Terrorism" for a while now, with the assertion that the word terrorism has become a fad word since it was (is) used as a reference for violence regardless of the nature and character of that violence (Jenkins, 1980). Many versions of terrorism today assume that to understand terrorism is to see that it is a concept that cannot be fully understood (Furedi, 2009). Therefore, to reach a consensus on the meaning of terrorism, rather than a definition, it is more important to determine its descriptive features (Connor, 2018). The complexity of the heterogeneous nature of the phenomenon of terrorism was convincingly illustrated by Thomas H. Mitchell, which suggested a negativist approach to the definition of terrorism, according to which the definition of terrorism must clearly define what terrorism is not (as cited in Schmid, 2004:408). British sociologist Philip Schlesinger, on the other hand, is of the opinion that an agreed definition of terrorism has not been achieved, since the definition process itself is part of a wider dispute in relation to ideological and political goals (as cited in Schmid, 2004). The concept of terrorism cannot be separated from the wider social, political, cultural and linguistic context that constitutes a necessary precondition for any discussion of terrorism (Erlenbusch, 2014). Definitional approaches are faced with resistance due to fundamental epistemological, methodological and analytical reasons. As Ignacio Sánchez-Cuenca (2014) points out, pervasive conceptual debates and lack of consensus on the concept of terrorism in turn point to deep anomalies within terrorism studies. It is debatable whether "lexicographic fixation" contributes to the development of the discipline itself and the accumulation of knowledge within it, or whether it has a paralyzing effect on substantive research. Is terrorism in a certain "pre-theory stage" (Richards, 2014) within the academy? However, by analyzing the content of the existing definitions of terrorism and making frequency analysis of the key characteristics of those definitions (No 373), scientists have extracted the key elements that determine terrorism, which constitute the definition used in this paper. Therefore, terrorism is the organized use of force and violence or the threat of the use of violence in order to achieve political goals through the intentional spread of fear or terror, based on anticipated reactions of wider psychological effects (Lucić, 2019, p.84).

*War:* An elementary insight into historical processes indicates that (collective) violence in general and war in particular are not aberrations but an integral part of human social experience. War and collective violence shaped a significant part of the recorded human history and were decisive components for the emergence of the modern social order. War created the modern world, wars are fought for far-reaching changes in overall social and political circumstances, therefore war is undoubtedly one of the most important sociological phenomena that determined the history of our sociality (Centeno; Enriquez, 2016; Žunec, 1998, Malešević, 2011). After all, Heraclitus' famous sentence according to which "war is the father of all things" (as cited in Marković, 1983) has been confirmed for centuries by now. Moreover, scientists locate war as an institution of international society, as a mechanism for maintaining the values of the international order (Pejcinovic, 2013).

Despite the undeniable social relevance of war, an acceptable social scientific definition of war has not been achieved. Sociologically, perhaps, it is crucial to search for an answer to why war happens (Centeno; Enriquez, 2016). War is an extremely complex phenomenon that resists to scientific analysis (Horgan, 2014), and precisely in the effort to define war, it is convincingly confirmed that social scientists are forced to simplify the complexity of what they observe in order to explain it. Cicero, for example, defines war as a violent conflict, Hugo Grotius defines it as the state of conflicting parties who consider themselves as such, while Denis Diderot believes that war is a spasmodic and violent disease of the body politic (as cited in Moseley, 2002). In *A History of Warfare* John Keegan offers a useful characterization of the political-rationalist theory of war. It is assumed to be a regular affair involving states, with declared beginnings and expected ends, easily identifiable combatants, and a high level of obedience from subordinates. Alexander Moseley (2002) argues that war is a state of organized, open collective conflict or hostility. War is understood as actual, deliberate and widespread armed conflict between political communities. It is a phenomenon that occurs only between political communities, defined as entities that are states or intend to become states, motivated by a sharp disagreement about governance (Buzar, 2020; Gelven, 1994; Seth, 2016). Carl von Clausewitz, the father of the modern theory of war, in the book *On War*, the only truly great book on war, systematically tried to define war and describe it phenomenologically in all its complexity (Joas; Knöbl, 2013). According to him, war is the continuation of politics by other means, it is an act of violence undertaken with the aim of forcing the opponent to submit to our will (Clausewitz, 1997). As the foremost authority on the study of conflict, the Stockholm International Peace Research Institute (SIPRI) defines war as a major armed conflict defined as an irreconcilable dispute over the issue of governance or territory involving the use of armed force between two military forces, of which at least one of them represents the state and which led to at least a thousand combat-related deaths in a single year of the conflict (as cited in Žunec, 2007)<sup>2</sup>. International law divides armed conflicts into international and non-international armed conflicts. The Geneva Conventions on the Protection of Victims of War from 1949<sup>3</sup> and the Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts from 1977 form the basis for the regulation of international armed conflicts. On the other hand, the basis for regulating non-international armed conflicts is Article 3, common to all Geneva Conventions, and the Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of Non-International Armed Conflicts, also from 1977. An international armed conflict is a declared war or any other armed conflict that breaks out between two contracting parties (states), even if one of them does not recognize the state of war. It was supplemented by the Protocol Additional from 1977 that conflicts in which peoples fight against colonies, occupation, and racist regimes in the pursuit of self-determination are also included. Non-international armed conflicts (or armed conflicts that do not have an international character) are conflicts that take place on the territory of a contracting party (state) between its armed forces and other forces that, under responsible command, exercise such control over part of the territory that enables them to conduct continuous and coordinated military operations.

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<sup>2</sup> The authoritative Uppsala Conflict Data Program (UCDP), a scientific-research program conducted since 1971 by The Department of Peace and Conflict Research, Sweden's Uppsala University, uses twenty-five deaths in one year as a criterion. See: UCDP Definitions.

<sup>3</sup> Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field, Convention For the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea, Convention relative to the Treatment of Prisoners of War, Convention relative to the Protection of Civilian Persons in Time of War. Conventions as well as Supplementary Protocols can be found in: Narodne novine 5/1994.

Politically, on the other hand, the definition of non-international armed conflicts is somewhat broader. The criteria for a civil war are: it is a violent conflict within the borders of an internationally recognized state; conflict between military and politically organized actors who have state-political visions or programs; participation of the authorities as one party in the conflict; recruitment of war actors from local communities; mass suffering that distinguishes war from occasional forms of violence; effective resistance of the weaker side that does not turn the war into a one-sided massacre; concluding a peace agreement as one of the ways to end the war (Kasapović, 2020).

### **3. CASE STUDY ANALYSIS**

In this part we present four case studies of conflicts in which statehood is the central element and in which terrorism was actively used. In all four cases, the conflict is determined primarily by ethno-national characteristics, but they are also located in different geographical frameworks with different socio-political and historical circumstances that shaped the character of the actors and the conflict<sup>4</sup>. Within the Palestinian-Israeli conflict, the Palestinians are trying to create a state that never existed but was envisioned by the international community. The republican movement in Northern Ireland is trying to separate Northern Ireland from the United Kingdom and unite the island of Ireland into a single political entity independent of London. Whether it was the Russian Empire, the Soviet Union or the Russian Federation, the ultimate goal of the Chechen struggle remained unchanged - the creation of an independent "Chechen Republic of Ichkeria" in the area of the North Caucasus. The goal of pro-Russian separatists in Donbass is secession from Ukraine and integration with the Russian Federation, which according to the narratives of the leaders of the Novorussia movement and some Russian officials would represent the correction of a historical geopolitical injustice. By applying the theories of war to the mentioned cases, we will determine in which situations the conflict escalated into a state of war and what role terrorism played in these processes, namely, we will determine the relationship between conflict, war and terrorism. We will analyze the trends of terrorism within the considered cases primarily on the basis of data provided by the Global Terrorism Database ("START", 2022), which is the most comprehensive database for terrorist attacks in the world. The topic is analysed using the case study method and the comparative method. A case study, a design with multiple cases, will serve us both to observe individual cases and possible changes that occurred over a certain period of time, and to show the general purpose of all cases within the general framework of the research. This type of research is useful for studies that ask questions "how" and "why" something happens, and when the focus is on a contemporary phenomenon within a context of real life, as it is the case here. The comparative method is important for showing the similarities and differences in these cases in order to causally derive valid conclusions from the comparison. The combined research methodology will use quantitative indicators and qualitative analysis of secondary data. Each individual case consists of a comprehensive study that seeks convergent data in terms of facts and conclusions about the case (Yin, 2007).

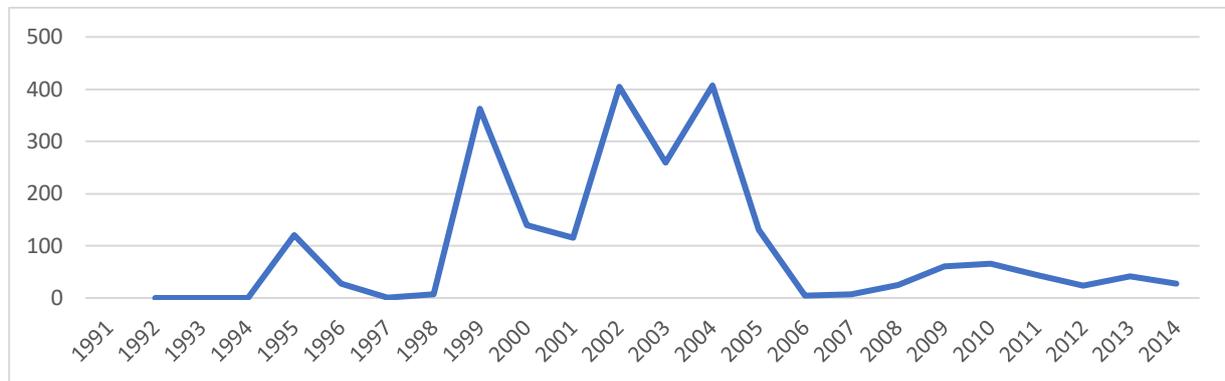
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<sup>4</sup> The only similarity that appears in this context is that Ukraine and Chechnya were part of the Soviet Union, but there are significant social, political, historical and cultural differences between the North Caucasus, Chechnya and Ukraine, i.e. Donbas

### 3.1. Russian – Chechen Conflict

#### *Basic features and course of the conflict development*

The Russian-Chechen conflict has been on going since the end of the 18th century, namely, since the rebellion of Imam Shamil, who united the peoples of the Caucasus in the fight for independence against the Russian Empire. The almost centuries-old aspirations of the Chechen movement for independence were realized in the early 1990s, when the collapse of the Soviet Union created a political space for the creation of the "Chechen Republic of Ichkeria". The "Chechen Republic of Ichkeria" was established in 1991 after a group led by Dzhokhar Dudayev seized government buildings and declared independence, followed by a continuous period of increased violence. According to Chechen narratives, the conflict is a continuation of the centuries-old struggle of the Chechen people for independence against the oppressive Russian government, while according to Russian narratives, the Chechen struggle is the result of the actions of criminals and radical Islamist groups that act as a branch of Al Qaeda and do not represent the interests of the population<sup>5</sup>. From 1994 to 2014, 2,240<sup>6</sup> people died as a result of terrorist attacks related to the Russian-Chechen conflict, and only in 1997, 1998, 2006, 2007 and 2012 were fewer than 25 deaths recorded as a result of attacks.



*Graph 1. The number of victims as a result of terrorist attacks in the Russian-Chechen conflict (source: Global Terrorism Database - GTD).*

The Chechen movement was divided from the very beginning of the establishment of governance, which resulted in an internal conflict between the forces of the then president Dzhokhar Dudayev and opposing groups that were militarily aided by the Russian Federation. In December 1994, after the Chechen authorities refused to accept the Russian ultimatum on disarmament, the Russian army launched a military attack on Chechnya. Due to the defeat in the first stages of the conflict, Chechen forces retreated to hard-to-reach mountainous areas, which allowed them to prepare and carry out guerrilla operations and terrorist attacks, such

<sup>5</sup> Well-known terrorism expert Rohan Gunaratna hold the position that Bin Laden financially supported Islamist activities in Chechnya, but that the Russian security services exaggerated such a relationship (LaFraniere, 2006).

<sup>6</sup> It should be noted that the mentioned figures do not include attacks that were labelled as unknown in the GTD. In the mentioned period, 1,590 people died as a result of a terrorist act in Russian Federation for which the perpetrator was not identified. Eminent expert for the research of terrorism in the North Caucasus, Yelena Pokalova (2015) states in her research that 2,330 people died as a result of Chechen terrorism from 1994 to 2013. After 2014, terrorism did not disappear from the North Caucasus, but the actors changed their identity considerably. Over time, the Chechen movement for independence, or the Chechen Republic of Ichkeria, went through a process of fragmentation and de-nationalization, with religion gradually taking over the identity of the movement. Such a process of sacralization resulted in the fact that in 2014, most of the leaders of the Caucasus Emirate, which was established by Doku Umarov on the structures of the Chechen Republic of Ichkeria, completely passed under the framework of the Islamic State movement in the North Caucasus.

as the attack on Budennovsk in 1995, which resulted in more than a hundred dead and 400 injured (Pokalova, 2015, p. 196). This phase of the conflict ended with the signing of the Khasavyurt ceasefire in 1996, i.e. the Moscow Agreement in 1997, and represents a period in which, according to conservative estimates, around 46,500 people died (Dunlop, 2000, as cited in Hughes, 2007, p. 149). Chechen forces managed to defeat the Russian army and establish control over Grozny and other areas, which enabled them to hold the presidential elections in January 1997. Aslan Mashkadov won the elections, which were conducted under the supervision of the OSCE (Organization for Security and Cooperation in Europe) observation mission, and as president he led "Ichkeria" in a period of relative peace between 1997 and 1999. Apart from Mullah Omar's government in Afghanistan, "Ichkeria" was not officially recognized by any country, while Mashkadov was faced with a lack of capacity to suppress the state of lawlessness and the activities of various armed groups. The state of relative peace lasted until 1999, when in August a group led by Shamil Basayev and Ibn al-Khattab attacked neighboring Dagestan, while in September 1999 a series of bombings rocked Moscow, Buinaksk, Makhachkala and Volgograd, killing more than 300 people (Pokalova, 2015). The Russian authorities, led by Vladimir Putin, blamed the attacks on Chechen terrorists who used the territory of Chechnya as a safe haven. Such a development led to the launch of an anti-terrorist operation, namely, a new phase of escalation of violence<sup>7</sup>. According to the criteria<sup>8</sup> and data of the Correlates of War (COW) project, this phase of the conflict escalated into a war that lasted from 1999 to 2003 and is called the second Chechen war (Sarkees & Wayman, 2010). Already by the middle of 2000, Russian forces established control over the territory of Chechnya and installed a pro-Russian government headed by Ahmad Kadyrov, but this did not mark the end of the active phase of the conflict, but the state of an increased number of terrorist attacks. According to the GTD database, during 2002 and 2004, the largest number of victims of terrorism was recorded since the beginning of the conflict in the 1990s<sup>9</sup>. The anti-terrorist operation officially ended in 2009, and the Chechen movement went through various stages of fragmentation and reorganization over time, which resulted in the creation of the Caucasus Emirate under the leadership of Doku Umarov<sup>10</sup>.

#### *Classification of the conflict according to definitions of war*

Since the beginning of the conflict, Chechen authorities have exercised real and political authority over the area; they resisted the Russian security forces; Chechen forces recruited from local communities, although they also had an influx of foreigners in their ranks; they signed agreements that ended the first phase of the conflict in 1997, but the government of the "Chechen Republic of Ichkeria" was not recognized by the international community and the conflict was fought within the borders of the Russian Federation. Since the beginning of the Russian-Chechen conflict, terrorism has been used at every stage, while its extensive use by Chechen forces began with the attack on Budennovsk in 1995. A combination of guerrilla and terrorist attacks led to the signing of a peace agreement, followed by a state of relative peace.

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<sup>7</sup> Due to the lack of exact data and too wide oscillations in the allegations, it is difficult to talk about the extent of casualties in this phase of the conflict.

<sup>8</sup> According to the criteria of the COW project, a war is considered a continuous conflict of organized military groups that resulted in at least a thousand deaths in a period of 12 months (Sarkees, *The COW Typology of War: Defining and Categorizing Wars (Version 4 of the Data)*).

<sup>9</sup> Schaefer (2011, p.2) illustratively states that in the period of seven months of conflict in 2008, 178 members of the Russian security forces were killed, while in the same period, 148 American officials were killed in Iraq.

<sup>10</sup> From an organizational point of view, Chechnya became one of the vilayets of this political entity, and the movement was completely decentralized, with the branches gaining significantly greater autonomy and freedom of action.

The terrorist attacks of September 1999 led to the launch of an anti-terrorist operation, namely, a state of increased violence on a scale that the COW project classified it as a war and which lasted until 2003. According to the criterion of the number of victims used by the Uppsala Conflict Data Program (UCDP), the war did not end even then, because in the period up to 2014, except in 2006 and 2007, as a result of terrorist attacks alone, more than 25 people were killed every year<sup>11</sup>. Based only on the criteria of the number of victims as a result of the conflict, it is difficult to determine precisely when the conflict turned into a war primarily due to the lack of exact data on the number of deaths. By using GTD's database, the number of people killed as a result of terrorist attacks annually has never exceeded 1,000 dead, but the terrorist acts in September 1999 were the reason for the escalation of violence, i.e. a state of violence that by all criteria falls under category of war. According to the criteria of 1,000 victims per year used by SIPRI and COW, the conflict escalated into a state of war twice, from 1994 to 1996 and from 1999 to 2003. Examining the Russian-Chechen conflict since the early 1990s, by all parameters it has been a civil war in which terrorism has been actively used during every phase of the conflict.

### **3.2. Russian-Ukrainian conflict**

#### *Basic features and course of the conflict development*

In the narrowest and most recent sense, the Russian-Ukrainian conflict can be examined from the end of 2013, namely, the beginning of 2014, when protesters gathered in an umbrella movement known as Euromaidan clashed with the government structures headed by pro-Russian President Viktor Yanukovich. The originally peaceful protests gained significant support from a wider part of the population over time and became more massive and soon escalated into a state of violent conflicts with the governmental structures. Clashes continued throughout the country, where Maidan groups clashed not only with government structures, but also with the anti-Maidan movement that supported Viktor Yanukovich, as well as his pro-Russian policy. The conflict on the streets of Kyiv escalated at the end of February, which resulted in the overthrow of Viktor Yanukovich and the death of more than a hundred people ("The Office of the High Commissioner for Human Rights" (OHCHR), 2016). The key moment were the sniper shots from the nearby buildings at the protesters, after which the situation escalated irreversibly. Such acts can be characterized as terrorism because the goal was to initiate political changes based on violent activities and anticipated psychological reactions<sup>12</sup>. Conflicts continued throughout the country, especially in the southeast, i.e. the cities of Odesa and Kharkiv, as well as other parts of Donbass, but the situation was still kept within the framework of social conflicts and protests, without the extensive use of military means, something that changed in mid-April 2014. On April 12, Igor "Strelkov" Girkin with the so-called "Crimean group" occupied the government buildings in Slov'yansk, after which the Ukrainian government announced the launch of an anti-terrorist operation<sup>13</sup>. The launch of the

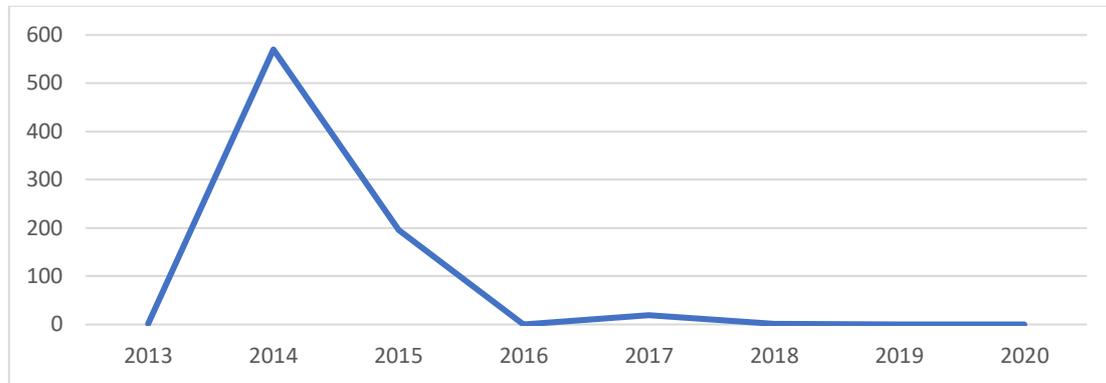
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<sup>11</sup> During 2008, 25 deaths were recorded.

<sup>12</sup> What is the subject of contentious perspectives is the question of what political change and reaction were expected and who was the initiator of such activities? One perspective is that sniper shootings were part of a repressive regime's policy aimed at breaking morale and dispersing protesters, as they did with other violent methods, especially the proxy use of violent groups. Another perspective is that the sniper shots were orchestrated by radical groups within the Maidan protests, whose goal was to radicalize and escalate the situation irreversibly. Following the clashes in the streets, Yanukovich's government announced the launch of an anti-terrorist operation across the country, but such a policy was never implemented in an operational sense, as President Yanukovich was soon ousted from power.

<sup>13</sup> The immediate goals of Strelkov's action in Slov'yansk can be divided in three main categories: towards society, towards the Ukrainian government and towards the Russian Federation. Towards society, the goal was to stimulate

anti-terrorist operation also meant an escalation of the conflict, during which more than 3,000 people died by the end of July 2014 ("United Nations", 2014a). According to a UN report, between 14,000 and 14,200 people have died by 2022 as a result of the conflict between Ukrainian security forces and separatists supported by the Russian Federation<sup>14</sup> ("United Nations Ukraine", 2022). In the same period, according to GTD's database, as a result of terrorist attacks in Ukraine, which are related to the Russian-Ukrainian conflict, 784<sup>15</sup> people died.



*Graph 2. The number of victims as a result of terrorist attacks in the Russian-Ukrainian conflict from 2014 to 2020 (source: Global Terrorism Database)*

Following the launch of the anti-terrorist operation, the conflict soon took the form of conventional positional warfare, but terrorism was still actively used. According to GTD, an increased number of terrorist attacks in Donbass was recorded from 2014, namely, since the outbreak of conflict until 2015, which was marked by the signing of the second Minsk Agreement and the centralization and professionalization of separatist forces. From the very beginning of the conflict, the anti-terrorist operation emphasized the fact that it was a fight against terrorists in the Donbas, in which the Security Service of Ukraine had a central coordinating role, but all available means were used, including existing military capacities and newly formed volunteer battalions<sup>16</sup>. In the narratives of pro-Russian separatists, the conflict represents the fight against oppressive structures in Kiev, while according to the narratives of Ukrainian officials, the processes in the east of the country are primarily due to the subversive activities of the Russian Federation. Already in the first months of the conflict in Donbass, the separatist forces established both formal and political power in the area, which enabled them to plan and conduct military operations and resist the security forces of Ukraine. The Ukrainian side and representatives of the separatists signed two Protocols<sup>17</sup> from Minsk, the goal of which

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social mobilization for the purpose of separatist goals, towards the Ukrainian government, the goal was to stop the advance of the security forces in order to consolidate the separatist movement in other cities in the east, while in relation to the Russian government, the expected reaction was military intervention and finally annexation areas.

<sup>14</sup> There are different perspectives on when the Russian army intervened in Donbas, but the general consensus is that it happened in August 2014, preventing the complete defeat of the separatist forces.

<sup>15</sup> This does not include 137 deaths as a result of terrorist attacks for which the perpetrator is labelled as unknown.

<sup>16</sup> The anti-terrorist operation was in place until 2018, when it was renamed into a joint forces operation in which formal coordination activities were taken over by the Ministry of Defense of Ukraine and, in a formal legal sense, emphasis was placed on the role of the Russian Federation in the conflict in Donbass ("Old War, new rules: What comes next as Ato ends and a new operation ...", 2018). Ukraine never declared war on Russia but stated that it was facing state-sponsored terrorism in which the Russian military and intelligence structures played a key role in all phases of the conflict, including the phases of relatively peaceful protests on the streets of Donbas cities.

<sup>17</sup> The two agreements from Minsk were signed under the strong auspices of France and Germany, which together with Ukraine and Russia consisted the Normandy four, a highest level diplomatic platform dealing with

was to end the war and achieve the modality of peaceful reintegration of the territory within the framework of the Ukrainian state. The protocols were signed not only by representatives of the separatists and Ukraine, but also by the OSCE as an international organization and the Russian Federation, although the role of Russia is not mentioned in the document (Allan, 2020). "Luhansk" and "Donetsk People's Republic" were not recognized by any UN member state until 2022, but they had continuous help from the Russian Federation that enabled them to survive in every phase of the conflict.

#### *Classification of the conflict according to definitions of war*

Based on the number of victims, the Russian-Ukrainian conflict already escalated into a state of war in 2014. In the first phase of the conflict, in which the Maidan movement clashed with the existing governmental structures, more than a hundred people were killed by March. According to UCDP criteria, the conflict already at this stage escalated into a state of war. According to the criterion of at least one thousand dead used by SIPRI, the conflict escalated only after the anti-terrorist operation in Donbas was started, after which the number of three thousand dead was exceeded in just a few months. In both cases, the act of terrorism was the factor that led to the escalation of the conflict to a state of war - on the streets of Kiev it was sniper shots on protesters, while in the case of Donbas it was the seizure of government buildings in Slov'yansk. The war in Ukraine until 2022 and the Russian invasion of Ukraine had the characteristics of a civil war: first of all, it was fought within the borders of Ukraine between the authorities and separatists; the separatists established real and political power over the area; they carried out local mobilization; they offered adequate resistance and signed two protocols, or agreements, which attempted to achieve a truce and stabilize the situation. But in the entire process, it is also important to consider the influence of international factors that were crucial in this case, and this refers to the help and influence of the Russian Federation. At the social and state level, Russia provided assistance to the separatists, without which the existence of "Luhansk" and "Donetsk People's Republic" would not have been possible in all phases of the conflict, which is also reflected in the fact that Russia is one of the signatories of the Minsk Protocol. Therefore, even before the Russian invasion of Ukraine, it was an internationalized internal conflict.

### **3.3. Palestinian Israeli conflict**

#### *Basic features and course of the conflict development*

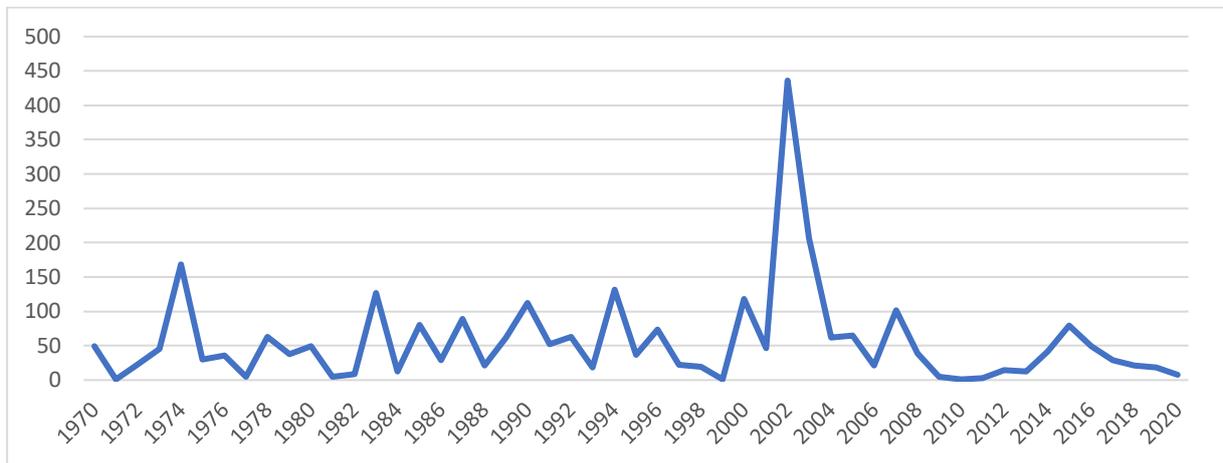
The Palestinian-Israeli conflict began in the 1920s when the territory of today's Palestine and Israel was under the British mandate. The British mandate contained the territory of Palestine, which, based on the proposal of the UN Committee for Palestine, was to be divided into an Arab and a Jewish state in 1947 ("United Nations General Assembly", 1947). Until 1948, the conflict was contained within the framework of the activities of armed social groups such as the Irgun, Lehi and Haganah on the Israeli side, and Palestinian or Arab groups such as the Black Hand led by Izz Ad din Qassam<sup>18</sup>. At the end of the mandate in 1948, the state of Israel was declared, but not Palestine, because the member states of the Arab League did not agree with such proposals and decided to attack Israel militarily. The Israeli forces defeated the Arab

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the conflict in Ukraine. It is impossible to examine the entire conflict at a diplomatic level without considering Viktor Yanukovich's decision to refuse to sign the Agreement on the Accession of Ukraine to the European Union in 2013, after which the protests on the streets of Kyiv began.

<sup>18</sup> Haganah and Qassam have continued to be an integral part of the Palestinian-Israeli conflict to this day. From Haganah emerged Israel Defense Forces (IDF), while Qassam's name bears the military wing of Hamas, the most powerful Palestinian terrorist organization, social movement and government in Gaza.

armies, which ultimately resulted in the Egyptian occupation of Gaza and the Jordanian occupation of the West Bank, which was also part of the territory planned for the Palestinian state. The Arab-Israeli conflict escalated again during 1967 when Egypt and Syria, as the United Arab League, again attacked Israel and lost. As a result of the conflict, Israel occupied the territories of Gaza and the West Bank, which were not recognized by the United Nations but were considered the occupied Palestinian territory. Following the defeats of the Arab states, the Palestine Liberation Organization (PLO) began to assume an increasingly important role, which represented the umbrella organization of some of the movements and organizations fighting for the independence of Palestine. During 1974, the PLO was recognized by the UN as a representative of the Palestinian people and acquired the status of a non-state observer<sup>19</sup>. The UN General Assembly granted Palestine the status of an observer state ("United Nations General Assembly", n.d.). Terrorism has been an integral part of the Palestinian-Israeli conflict since its beginnings and it continues to be to this day. Since 1970, according to GTD, 2,818<sup>20</sup> people have died as a result of terrorism related to the Palestinian-Israeli conflict. According to the data of the B'Tselem center, from 1987 until today, as a result of the Palestinian-Israeli conflict, around 14,440 people died ("B'Tselem", n.d.-a; "B'Tselem", n.d.-b).



*Graph 3. Number of deaths as a result of terrorist attacks related to the Palestinian-Israeli conflict (source: Global Terrorism Database).*

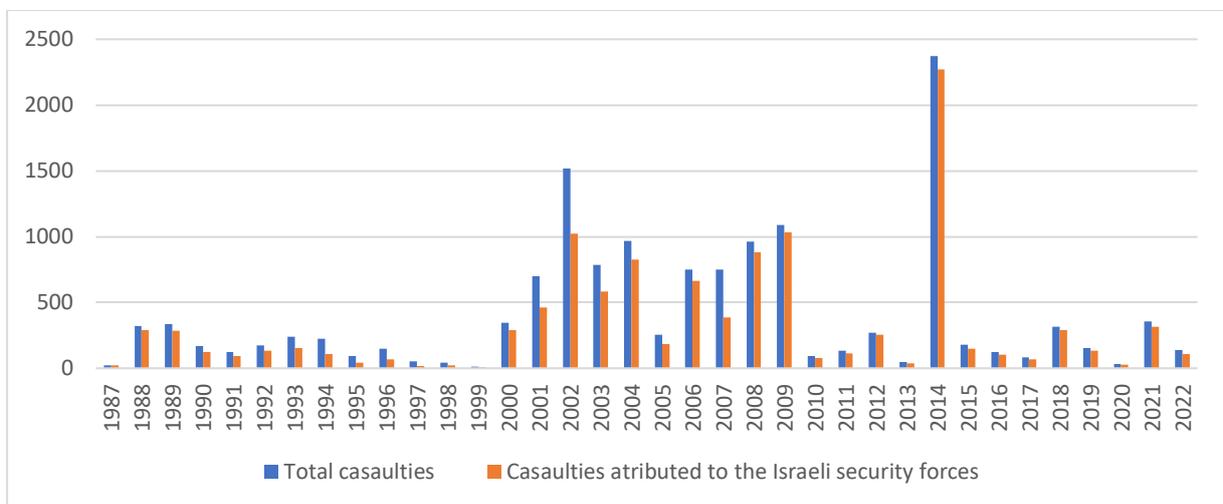
During 1987, the discontent of the Palestinian population escalated into a state of violent conflict with the Israeli security forces, known as the First Intifada. This phase of violence ended in 1993 with the signing of the Oslo Accords, which defined the modalities of functioning of the Palestinian Authority, which was supposed to exercise political and partially real control over the Gaza and West Bank areas. Simultaneously with the escalation of the Intifada, the Islamist movement grew significantly, which in the form of Hamas, assumed the role of the most powerful Palestinian terrorist organization and which also opposed the Oslo agreement. The period of increased optimism (Bloom, 2004) and reduced intensity of violence lasted until 2000, when the Second Intifada broke out. The escalation of the conflict reached its peak in 2002, when 1,518<sup>21</sup> people died ("B'tselem", n.d.-a). According to the GTD, 450 deaths were recorded as a result of terrorist attacks in 2002, which is the highest death toll from terrorism

<sup>19</sup> Since 1988, the term Palestine has been used in the UN system.

<sup>20</sup> The number does not include 559 deaths as a result of terrorism in Israel, Gaza and the West Bank, for which the perpetrator is labelled as unknown.

<sup>21</sup> In his research, Richard Davis states that from 1988 to 2014, Palestinian terrorist organizations carried out 620 high-profile attacks against Israel, killing 1,586 and injuring 8,120 Israelis (2016, p. 36).

related to the Palestinian-Israeli conflict since 1970<sup>22</sup>. What distinguishes the First and Second Intifadas are the capacities of the Palestinian terrorist organizations, which in the period of the Second Intifada began with the extensive use of suicidal terrorism and rocket attacks. In response to the terrorist attacks, the Israeli authorities launched Operation Defensive Shield, during which, according to UN reports, almost 500 people died ("United Nations", 2002). The Second Intifada was followed by two events that significantly changed the framework of the Palestinian-Israeli conflict, namely Israel's withdrawal from Gaza in 2005 and Hamas's victory in the 2006 elections. Israel's eventual withdrawal allowed Hamas a limited real<sup>23</sup> and political power over the area, which also allowed it to increase its military capabilities. At the end of 2008, in response to terrorist attacks from Gaza, the Israeli security forces carried out Operation Cast Lead, during which about 1,400 people died ("B'Tselem", n.d-a). The same scenario followed in 2014 when Israeli forces launched Operation Protective Edge. According to the B'Tselem Center, 2,370 deaths were recorded in 2014, which is also the highest number of deaths recorded in one calendar year since 1987.



Graph 4. The total number of victims of the Palestinian-Israeli conflict from 1987 to 2022 according to the data of the B'Tselem center.

#### *Classification of the conflict according to definitions of war*

The conflicts were fought on the territory of Israel and Palestine, namely, Gaza and the West Bank, which had been occupied by Israel since 1967. According to the narratives of the Palestinians, the escalation of violence is a consequence of the oppression of the Israeli governmental structures against which the Palestinian people are fighting through armed means to exercise their right to self-determination. Palestine as a state is recognized by 138 UN member states; it is not recognized as a full member of the General Assembly, but has the status of an observer state. Hamas won elections in 2006 that were deemed regular by monitoring missions and has exercised political and limited real power over the Gaza Strip ever since. From 1987 to 2020, as a result of the Palestinian-Israeli conflict, only in 1987 and 1999 fewer than 25 people were killed, while the threshold of one thousand deaths was crossed in 2002, 2009, and 2014. In all three cases, terrorist attacks were the reason for launching Israeli military operations. According to the COW and SIPRI casualty criteria, the Palestinian-Israeli conflict has escalated to a state of war in three phases since 1987, while according to the UCDP criteria,

<sup>22</sup> The database records terrorist attacks since 1970, so earlier attacks are not included. The PLO as an organization was established in 1964.

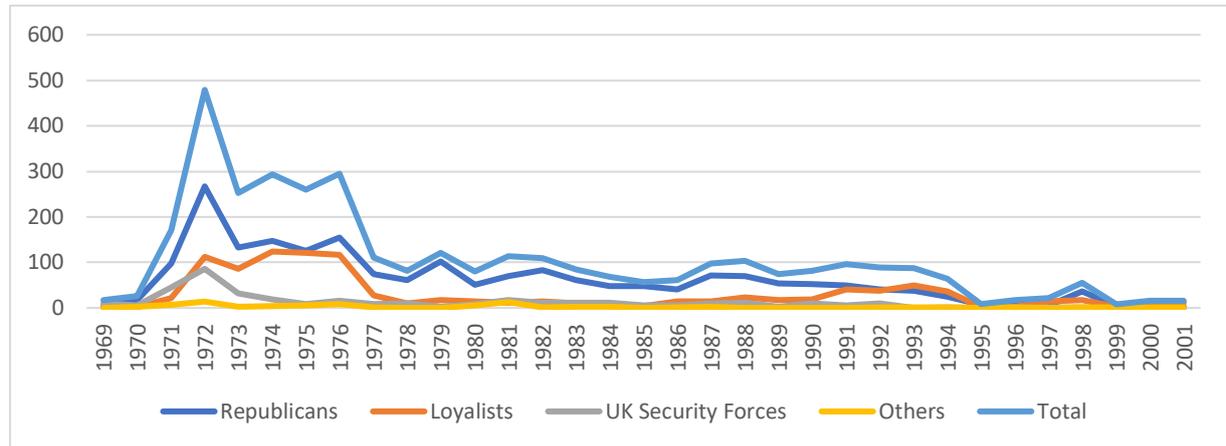
<sup>23</sup> Israel still controls sea and land borders and airspace.

the conflict has escalated to a state of war as early as 1988 and since then, with the exception of 1999., the war has never stopped, nor has the terrorism that is an integral part of the conflict.

### 3.4. The Northern Ireland conflict

#### *Basic features and course of the conflict development*

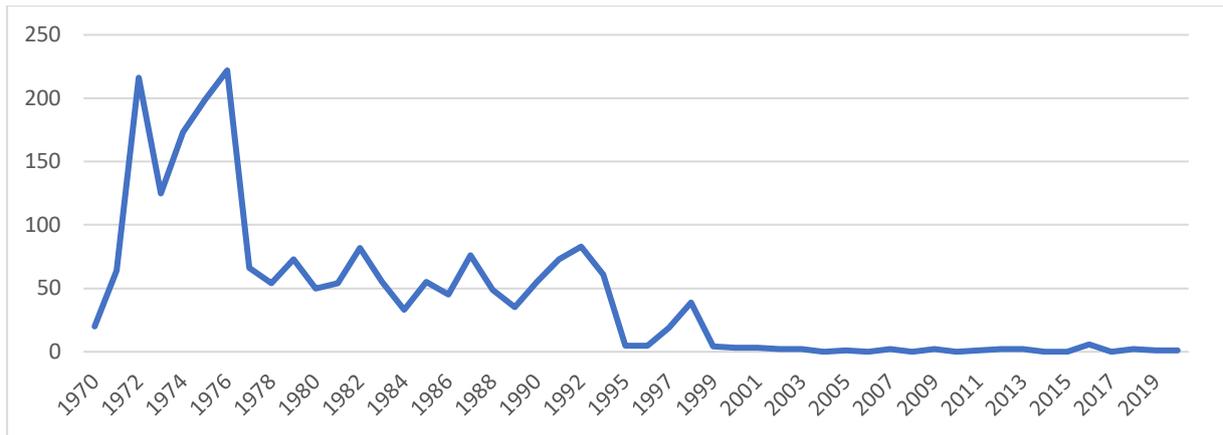
The modern Northern Irish conflict, as one of the longest and bloodiest in Europe, lasted from 1968 to 1998, during which 3,600 people died, while 47,000 were wounded (Bilandžić, 2005, p.19)<sup>24</sup>.



Graph 5. The total number of casualties associated with the Northern Ireland conflict from 1968 to 2001, according to data by Malcom Sutton.

The 30-year conflict (The Troubles), with a deep historical background, escalated in 1968 after civil marches of the NICRA (Northern Ireland Civil Rights Association) movement were attacked by loyalist paramilitary formations supported by the Northern Irish security forces, the so-called B-specials. The aim of the marches was to improve the social, economic and political status of the Catholic part of the Northern Irish population, but such activities resulted in an escalation and spiral of violence between loyalist and republican paramilitary formations and with the security forces of the United Kingdom. According to GTD, from 1970 to 2020, 2,120 people died as a result of terrorist attacks. Republican paramilitary formations are responsible for the largest number of deaths, whose goal is not to reform the system but to unify the North and the Republic of Ireland into one political entity, which in the narratives of loyalist paramilitary formations represents the historical fears of the Protestant part of the population who want to remain part of the United Kingdom.

<sup>24</sup> The shown data is according to Malcom Sutton's research (Sutton, *Sutton index of deaths*), and is available on the web pages of CAIN (*Conflict Archive on the Internet*). As a supplement to Sutton's data which counts the victims up until the 2001, Martin Melaugh did a research on casualties from 2002 to 2021, and for the period he registered 96 fatalities. Of the mentioned 96 deaths, according to the used criteria, for 25 of them it is not entirely certain whether they were related to the conflict (Melaugh, 2022).



*Graph 6: The number of victims as a result of terrorism related to the Northern Ireland conflict according to the GTD database<sup>25</sup>.*

Escalation of the conflict caused the United Kingdom Government to launch Operation Banner in 1969, whose aim was to establish peace by military means. The operation lasted until 2007, which makes it the longest-running British military operation during which more than 300,000 soldiers were cumulatively stationed in Northern Ireland ("GOV.UK.", 2019). Although initially welcomed by the Catholic part of the population who saw the army as protectors from loyalist gangs and B-specials, instead of a potential solution the presence of the army soon became part of the problem. Clashes between the newly created PIRA, that is, republican and loyalist paramilitary formations and the security forces led to an additional deepening of sectarian violence, which reached its peak in 1972, when almost 500 people died as a result of the conflict. The lack of weapons represented a significant problem for the republican paramilitary formations from the very beginning of their activities. PIRA, as the strongest republican terrorist organization, based its activities on the material support of a part of Northern Irish society, the Irish diaspora in the USA, and direct and indirect support from other countries. Direct support refers primarily to material aid from Libya, which supplied the movement with significant quantities of various types of weapons<sup>26</sup>. Indirect support to the PIRA can be considered in the context of the omission of activities by the Republic of Ireland, which up to a certain stage enabled the preparation and organization of terrorist attacks. It is obvious that the Northern Irish conflict, in terms of the key actors, goes beyond the framework and borders of Northern Ireland, namely, the United Kingdom, which is also evident from the fact that in order to achieve peace and stability, the active involvement of the Governments of the United Kingdom, the Republic of Ireland and the USA was necessary. There were several attempts and peace agreements to establish a state of relative peace, but the goal was achieved only with the signing of the Good Friday Agreement, namely, the intensity of violence was significantly reduced.

<sup>25</sup> One of the differences between the GTD and the CAIN database is that CAIN summarizes all the victims of the Northern Ireland conflict, including the ones that were killed or injured by the security forces. Until 2001 that number amounted 368 persons.

<sup>26</sup> During 1987, Libya tried to deliver large quantities of weapons by sea. The attempt to deliver weapons failed because the French security services, in cooperation with British institutions, intercepted the ship off the coast of France. The question arises, if the *Eksund* ship had reached its destination and PIRA had allocated and mobilized the resources obtained, to what extent would the conflict have escalated?

### *Classification of the conflict according to definitions of war*

According to GTD data, as well as Malcom Sutton's research, at no stage did the conflict exceed 1,000 deaths in a single year. With the exception of the period between 1995 and 1997, from 1970 to 1999, the number of people killed only as a result of terrorist attacks was never less than 25. Based on the number of casualties criteria used by SIPRI, the conflict never escalated to a state of war. On the other hand, based on the criteria of the number of victims used by UCDP, the conflict escalated into a state of war in 1970, and lasted almost until 1999. This is supported by the fact that the UK Government was forced to use military methods to bring peace and stability, which resulted in the UK's longest running military operation. Terrorism is continuously an integral part of the conflict and based solely on conservative estimates of the number of victims of terrorism, according to the UCDP criteria, it has escalated into a state of war. The Northern Ireland conflict took place on the territory of Northern Ireland, in which republican paramilitary formations tried to achieve the unification of the Irish island into one political unit by violent means, while loyalist paramilitary formations tried to prevent such processes by violent means. According to republican narratives, the root cause of the conflict are oppressive and discriminatory government structures based on Protestant supremacy and as such they are irreformable. Along with the paramilitary formations, the key subject of the conflict were the British security forces, therefore, it is a conflict between the state and social groups. Paramilitaries have never controlled areas such as they did in Palestine, Chechnya and Ukraine, but they have successfully used the inaccessibility of areas such as South Armagh County to plan operations. In this context, the role of the Republic of Ireland, which by its inaction enabled camps and training centers on its territory, is particularly important. That the Northern Irish conflict was not only kept within the framework of the United Kingdom is shown by the fact that foreign subjects actively participated in supporting the activities of the PIRA and thus were key factors that facilitated the signing and were themselves signatories of the peace agreement. Terrorism is an integral part of the Northern Irish conflict, which has the characteristics of a civil war, but with a pronounced international dimension in which states played an important role in the dynamics of the conflict's development.

### **4. CONCLUSION**

The presented research results indicate not only the separate complexity of war and terrorism as social phenomena, but also the complexity of their relationship. Analyses of case studies clearly highlight the correlations and causality of war and terrorism, but also their existence as epiphenomena. The presented case studies are identical in terms of their fundamental characteristics: at the center of the conflict is ethno-nationalism and the actors' aspirations for a certain statehood. Terrorism as a form of political violence is a central strategy and tactic in all conflicts. Different forms of terrorism are present in them: anti-state, pro-state and classic state. Observed phenomenologically, in every conflict, terrorism created conditions which resembled the state of a real war. However, the application of the strict methodological criteria of authoritative scientific centers (SIPRI) on the definition of war points to a different conclusion. There is no single generalized conclusion whether terrorism is the cause of war in the indicated cases, whether terrorism has turned into war. Even though we are talking about conflicts with identical social and political characteristics, in some cases or their phases, terrorism led to war, in others it did not. However, the existence of elements of war (number of victims) in "terrorist" is indisputable. It is even more convincing that each of the conflicts had its identical escalating phases: terrorism, civil war, internationalized civil war.

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# CONTROL PLANNING IN CONDITIONS OF MACROSYSTEM STABILITY, CASE STUDY CROATIA

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## **ABSTRACT**

*Planning and controlling are two key management functions. However, planning is not only a function of management but also a macroeconomic necessity, since it was developed in contract economics where there was no management. What the differences are and how planning is done, depending on the macro system, is the subject of this research. In line with the important differences in planning methodology in relation to the macro system, the study employs numerous research methods, of which the comparative method and the case study methodology stand out. The research results show that apart from important differences in planning methodology in relation to contract economics and market economy, the degree of formation and efficiency of the macro system is a fundamental factor for realistic planning. On the contrary, in the macro system of a lower degree of organization and structuring, control planning does not show the expected result. In conclusion, control planning is a powerful management tool and a guarantor of development, provided that the national macro system is developed and stable.*

**Keywords:** *control planning, national macro system, contract economics, market economy, efficiency of entrepreneurship and economy.*

## **1. INTRODUCTION**

Planning is an economic fact of all systems, but the way it is implemented differs significantly in terms of the socio-political determination of the state as well as in terms of the development of the national macro system. In totalitarian regimes, planning was developed, but it was subordinated to the system that ruled there. Developed Europe, especially Germany, has developed systems based on the knowledge that is woven into the system and all political decisions. In accordance with the problem of this research, the goal of this research is to analyse the role and form of planning in terms of the political orientation of the state, the national macro system, but also in terms of the development of the macro system. The goal of the research is contained in the valorisation of the factors that influence the success of planning as a management function in the civil societies of the EU. The research hypothesis is the claim that knowledge and political will significantly influence the success of planning and ultimately the success of the national economy, especially entrepreneurship.

## **2. MANAGEMENT, PLANNING AND CONTROLLING IN CROATIA**

The development of management in transition countries, including Croatia, began after the fall of the Berlin Wall in 1989, and the fundamental factor for its emergence was the Companies Act, which introduced Croatia into the market economy in terms of legislation. The theoretical beginnings of management in the late 90s and early 20s of this century were difficult with numerous problems, primarily the lack of the Internet. The definition of management itself was not very controversial, so the most acceptable definition of management was Kreitner's, which says: "Management is the process of working with others and with the help of others to achieve organizational goals in a changing environment with the effective and efficient use of limited resources."<sup>1</sup> So, as you can see, it is about achieving goals, for which plans are needed, because goals bind plans to themselves and vice versa.

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<sup>1</sup> Kreitner R. J.: "Management" 6th Edition, Houghton Mifflin Company, USA., 1995, p. 12.

In developing the idea of management, Kreitner established the basic determinants of management, such as:

- a) the manager does not perform the tasks, but has the role of leadership, directing the task performers and motivation, all with the aim of achieving the set goals through the maximum contribution of employees (cooperation with and use of others).
- b) management exists because of goals and to find the optimal way to reach the goal through joint efforts, considering the achievement of the goal as a measure of management success,
- c) a balance between effectiveness and efficiency should be ensured and the business entity must constantly adapt so that it is prepared for changes that already exist or are emerging in the environment.<sup>2</sup>

It can be concluded that the task of management is to formulate clear objectives, which must be set so that they are measurable, which is the task of controlling. As Deyhle says, "a controller is a seller of plans and goals"<sup>3</sup>, which implies active monitoring of plans and is characterised by control planning. As for management functions, the authors of the first Croatian generation of management, and this is similar in other economies in transition, promoted five<sup>4</sup>, and some four<sup>5</sup>, management functions:

1. Planning
2. Organizing
3. Leading
4. Checking
5. Staffing

At the same time, the term controlling was intertwined and replaced by the term checking, which led to confusion because the first authors of controlling<sup>6</sup> also appeared, so most management scholars did not associate controlling and checking. The reason for this language problem is the big conceptual difference between controlling and checking, and this language problem has remained with many authors until today. This fact, as well as the problems that have arisen around the use of the incompatible terms controlling and checking, is important because of the close connection between planning and controlling in the European School of Management.<sup>7</sup> This problem was pointed out in the mid-20s, and it is about the processing of functions that can be called "from Fayol to Fayol".

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<sup>2</sup> Ibidem

<sup>3</sup> Deyhle, A.: "Controller – Praxis", Band 1, Verlag for ControllingWissen AG, Offenburg, 2003.

<sup>4</sup> Buble, M.: "Osnove menadžmenta", Sinergija, Zagreb, 2006.

<sup>5</sup> Sikavica, P. & Novak, M.: "Poslovna organizacija", third amended and supplemented edition, Informator, Zagreb, 1999. p. 390. lists four functions of management: planning, organizing

<sup>6</sup> Avelini, Holjevac, I.: "Controlling u hotelskom poduzeću", Faculty of Hospitality, Opatija, University of Rijeka, 1995.

<sup>7</sup> Luković, T.: "Planning and Controlling, separate or symbiotic management functions", 2<sup>nd</sup> conference, OFEL 2014, Dubrovnik 2014

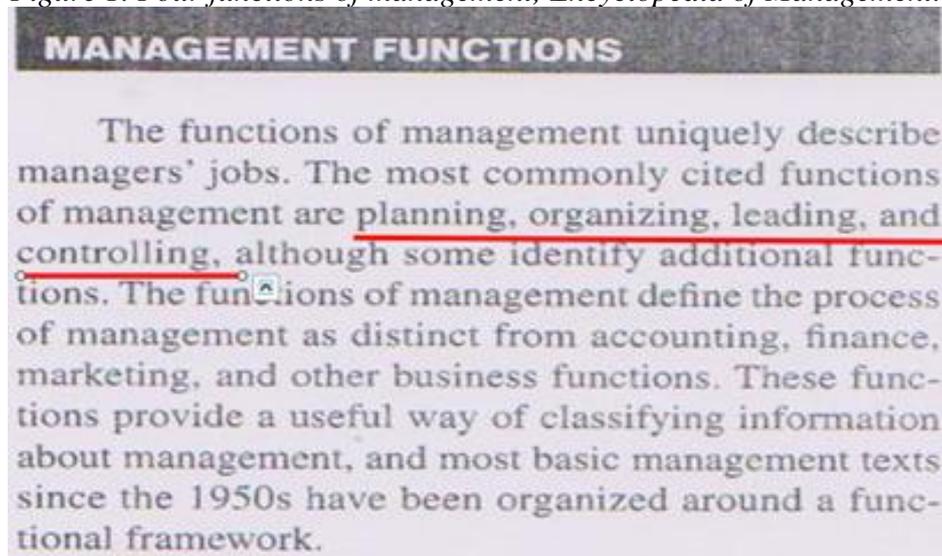
*Table 1. Historical development of controlling functions, "from Fayol to Fayol".*

Fayol, H. (1900).	P. Drucker (1961)	R. Kreitner (1989)	W. Koontz (1994)	R. Griffing (2011)
1. Planning 2. Organizing 3. Commanding 4. Coordinating 5. Controlling	1. A manager sets objectives. 2. A manager organizes. 3. A manager motivates people by making 'people decisions' on compensation. 4. A manager measures performance. 5. A manager develops himself and others.	1. Planning 2. Organizing 3. Decision making 4. Communication 5. Motivation 6. Leading	1. Planning 2. Organizing 3. Staffing 4. Leading 5. Controlling	1. Planning & decision making 2. Organizing 3. Leading 4. Controlling

Source: Luković, T.: "Planning and Controlling, separate or symbiotic management functions", PowerPoint presentation 2<sup>nd</sup> conference, OFEL 2014, Dubrovnik 2014

At least as far as the non-Croatian management authors are concerned, the problem of management functions was finally solved by the Encyclopedia of Management<sup>8</sup>, which defines four management functions: *planning, organizing, leading* and *controlling*.

*Figure 1. Four functions of management, Encyclopedia of Management.*



Source: Encyclopedia of Management, 6th edition, GALE Cengage Learning, United States of America, 2009., p. 493.

Unfortunately, Croatian management has not yet established its management functions, which has harmed the function of control planning, which has not yet found its place in practice in Croatia.

### **3. CONTROL PLANNING IN THE EUROPEAN SCHOOL OF MANAGEMENT**

Under the leadership of Germany, the European School of Management has shaped the European system for the exercise of management functions, which is recognised in all developed EU countries. The German School of Management is the result of more than thirty years of cooperation between leading German universities such as Munich, Mannheim, Heidelberg, Berlin, Bonn and others.

<sup>8</sup> Encyclopedia of Management, 5th Edition, Edition by Marilyn M. Helms, D.B.A. p. 493.

Relatively selflessly and with the support of all German governments, the universities researched management as well as other disciplines in order to provide the German economy with the best bases for development and to create an efficient national development model. Thanks to this, Germany is now a member of the EU, which, thanks to the system, ensures investment with the lowest investment risk. The European School of Management has promoted a special system for the exercise of management functions.

*Figure 2. P-O-L-C Framework u in the German School of Management*



Source: Luković, T.: "Planning and Controlling, separate or symbiotic management functions, 2<sup>nd</sup> conference, OFEL 2014, Dubrovnik 2014.

The distinctive feature of the European School of Management is the close connection between planning and controlling, which is based on the goal culture. In other words, the plan is the way to the goal, so in control-oriented management the goal must not be changed, but the plan can and must be changed because the goal must be achieved. This motto of the German School of Management and then the European School of Management made the European School specific. Accordingly, the control planning was developed, which strengthens the planning system with dispositive<sup>9</sup> planning and ensures the achievement of the set goal.

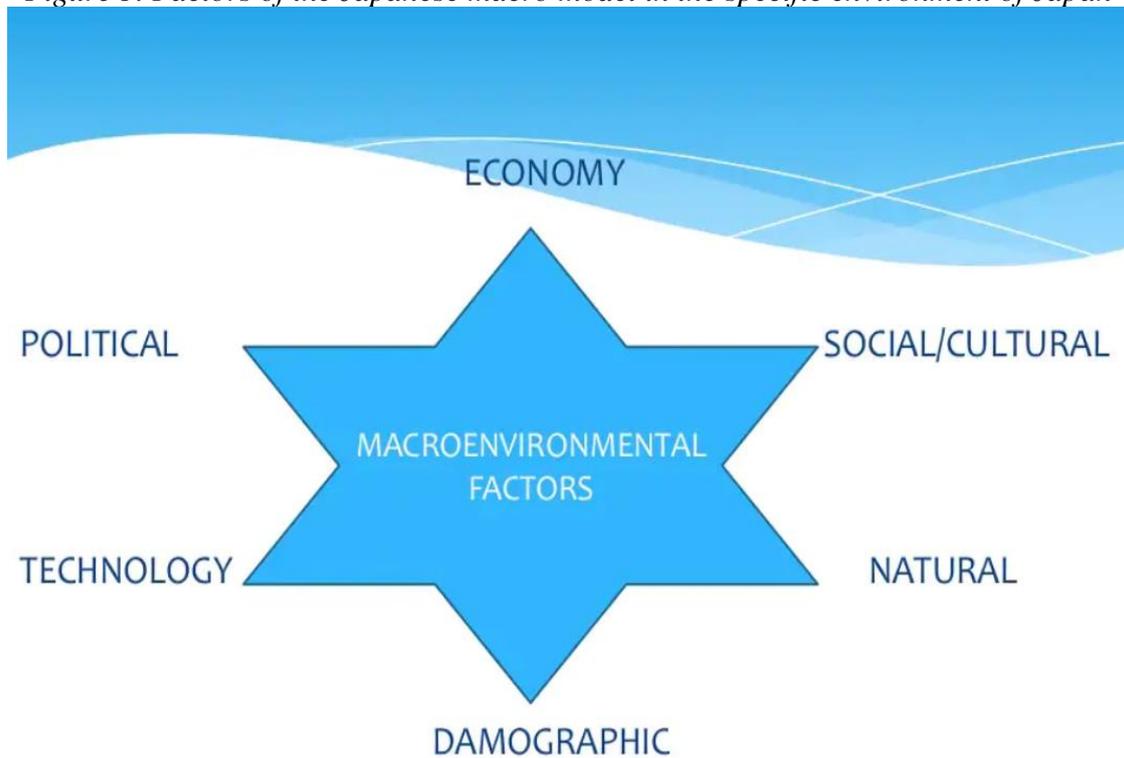
#### **4. MACRO NATIONAL SYSTEM, CONDITION OF STABILITY**

Planning is a well-known function under all conditions of political-economic activity and business. Nevertheless, planning shows fundamental differences among the macro systems in which planning plays an important role. This means that planning depends on the macro system and the political-economic orientation of the state and its economy. In this context, it is necessary to investigate the importance of the macro system and its role in all economic activities in the country, with special reference to the country and its economy in transition. In these countries, including Croatia, the system has not developed sufficiently in terms of a macro system, which is a clear macro system that has its foundational pillars that encompass the entire life and existence of everything that constitutes the successful existence and functioning within

<sup>9</sup> Luković, T. & Lebefromm, U.: "Controlling, koncepcija i slučajevi, prva knjiga", University of Dubrovnik, 2009., p. 46

a country.<sup>10</sup> The German macro system stands out as an example of a well-established system that scientists in Europe have been building for years.<sup>11</sup> Macrosystem modelling, then, is a new, young scientific discipline that deals with systems and their strength and importance. Research shows that the basic model of macrosystem can be defined, but each country and its economy must shape it according to its culture, goals, and other macro factors of a country and nation. On a global scale, Japan's macro system stands out, and any national macro system can be modelled after it.

*Figure 3. Factors of the Japanese macro model in the specific environment of Japan*



Source: Slide, PP, [www.slideshare.net/JYOTI21IIBM/macroenvironment-factor-of-japan](http://www.slideshare.net/JYOTI21IIBM/macroenvironment-factor-of-japan) (accessed 17th June 2022)

Thus, the macro system is a fundamental factor that shapes the planning function, so that in the developed economies of the EU it is called the control function of planning, while in the economies in transition, which have the character of a market economy, planning is only emerging. Therefore, it is advisable to explain how the controlling function of planning is formed at the micro level in the developed economies of the EU, especially in the German School of Management.

## **5. PLANNING IN THE MARKET ECONOMY, EUROPEAN SCHOOL**

Numerous definitions of planning can be found in management theory. However, all definitions of planning have been unified by the "Encyclopedia of Management," which states, "Planning is a management function that involves setting objectives and determining the course of action to achieve these objectives. Planning requires managers to be aware of the natural conditions of the environment. It also requires managers to be good decision-makers. Planning is a process

<sup>10</sup> Luković, T. & Piplica, D. & Jurić, T.: "Zarobljeno društvo, korupcija i demografija", Redak d.o.o. Split, Split 2022. p. 15.

<sup>11</sup> Ibidem, p. 26.

that consists of several steps. The process begins with scanning the environment, which simply means that planners must be aware of assessing unforeseen changes to which they must adapt their organization in terms of economic conditions, their competitors, and their clients. Planners must also try to anticipate future conditions. In this regard, forecasts form the basis of planning. Planners must establish objectives that are presented as a kind of report of what is to be accomplished and when it is to be accomplished. They must identify alternative courses of action to achieve objectives. After evaluating various alternatives, planners must make decisions about the best course of action to achieve objectives. They must formulate the necessary steps and ensure effective implementation of the plans. Finally, planners must continually evaluate the success of their plans and take corrective action as needed.”<sup>12</sup> In doing so, it is necessary to emphasize the relationship between the plan and the objective contained in the term objectives and forecast as the basis for planning. Fundamental to planning is that it is a kind of journey into the future, as emphasized in that encyclopaedia for planning: “Planning carries a vision of the future and sets forward-looking deadlines whose timing focuses on the organization of daily activities.”<sup>13</sup>

Thus, planning is basically done in stages, starting from the formulated mission, from the strategic plan and goal to the tactical plan and goal, to the operational plan and goal. Along this path, six planning steps and elements of planning can be listed:<sup>14</sup>

1. Establishing organizational goals,
2. Determining alternative ways to achieve goals,
3. Development of the assumptions on which each alternative is based,
4. Choosing the best alternative to achieve goals,
6. Development of plans to implement the selected alternative,
7. Implementation of plans into practice.

When planning moves from a process to a plan as a document, it must be formatted and presented as an official document of the company. As with all important activities in work and life, it is worth putting everything in writing. When creating a business plan, the entire document has more textual descriptions and somewhat less tabular presentation in terms of scheduling. At the lowest levels of planning, i.e. individual planning, it is necessary to draw up a detailed schedule of activities. In this way, each employee will have a clear and transparent idea of his activities and tasks, which he will contribute to the overall process of plan realization as well as to the planning process. Particularly important is the condition that planning is an iterative process, i.e. a process that has no beginning and no end, but is renewed and continued in the course of the business process. In this regard, it is necessary to embrace the dynamics of its movement.

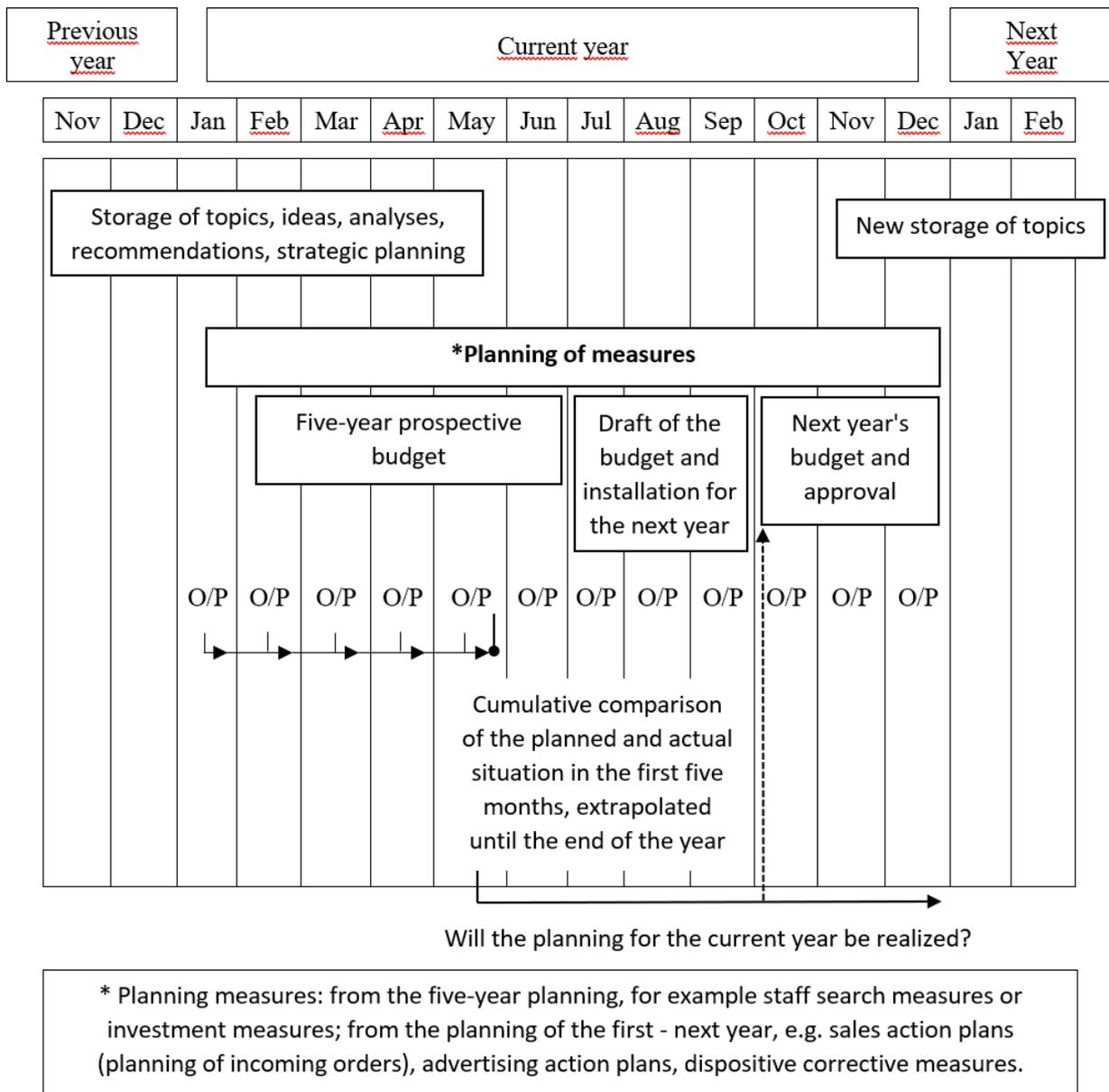
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<sup>12</sup> *Encyclopedia of Management*, 6th edition, GALE Cengage Learning, United States of America, 2009, p. 518

<sup>13</sup> *Encyclopedia of Management*, 6th edition, GALE Cengage Learning, United States of America, 2009, p. 699.

<sup>14</sup> Adapted from Certo, S. C. & Certo, S. T. : “Management“ 10th edition, Prentice Hall, Copyright, 2006, p. 137.

Table 2. Scheduling calendar



Source: Luković, T. & Lebefromm U.: "Controlling, planom do cilja, Druga knjiga", University of Dubrovnik, Dubrovnik 2014, adapted from Deyhle, A.: „Controllor-Praxis, Führung durch Ziele – Planung – Controlling“, Band II, Verlag für ControllingWissen AG Offenburg, Germany, 2003, p. 28.

Therefore, the first phase of planning begins in mid-March, that is, after the balance sheet and financial reports for the past year are completed. Then the planning for the next year begins. This first phase of planning ends at the end of October, and the definition of action plans begins, which continues until mid-December, usually even until the end of December. During the period from January to March, work is done on a long-term strategic plan, usually a five-year plan. At the same time, the total budget for the observed period is formed, which is reduced by one year, since the current year is also the operational year, for which everything has already been determined.

The planning path, which has the profile of operational planning for the following year, passes through three basic phases:

1. preparation of plan outlines,
2. implementation of planning coordination, and
3. completion of planning.

However, it should be emphasized that planning is not only an iterative process, but also a self-learning process, which means that the plan is never final and planning never ends, which means that planning is always open to corrections and changes.

## **6. CONTROL PLANNING, ENTREPRENEURSHIP, AND MACRO SYSTEM**

As previously explained, planning is still not developed in Croatia, as it was in the transition economies of the EU member states, as discussed in Chapter 5. At the micro level, management is concerned with other problems rather than planning, so that in Croatia, for example, the main task of management is to record the work done. This takes a lot of management time, and since the culture of objectives setting has not been developed, neither has planning. The relationship between the state and entrepreneurs is at a low level of development, which places the Croatian economy, along with Bulgaria, among the bottom performers among EU members.<sup>15</sup> The mentality of the former socialist regime has left deep traces in the economy, and the fact that entrepreneurship is the basis of any economy, especially the entrepreneurship of SMEs, is still not sufficiently accepted. At the macro level, as explained in the research<sup>16</sup>, it can be concluded that Croatia does not have a developed and efficient macro system, and within this system, an economic subsystem. Instead, numerous laws dominate, which cannot replace the macro system, and therefore there are no goals, no plans and even less controlling, which leads to a high level of corruption. The strategies, which essentially consist of plans and some specialised plans that the EU requires of Croatia, were developed *ad hoc*, without foundation or reason, and have no meaning. There is no controlling of macro plans, which is logical because it is not based on micro level plans. Thus, planning according to the bottom-up and top-down system is unnecessary and unknown. From all this it can be concluded that there is a big difference in the development of controlling and planning, and thus control planning, between the developed economies of the EU and the economies of the EU members that are in transition. All this is reflected in the great difference in the development of entrepreneurship and society in a broader sense.

## **7. CONCLUSION**

From all this it can be concluded that there is a significant difference in the development of management between the developed EU members and the transition countries of the EU members, and thus an indicator of economic and entrepreneurial development. The reason for this is the dynamics of the acquisition of knowledge from the field of market economy, which still does not seem to have transitioned with the "contract economics" from the former socialist regime. Likewise, given the development of the national macro system on the one hand and the support of a high level of corruption in Croatia as well as in other countries in transition, the opinion arises that there is no political will to solve the problems satisfactorily. The cooperation between science and national politics in transition countries is not satisfactory, which causes great damage to the overall development of EU transition countries.

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<sup>15</sup>WEB GEM 2019-2020. "Što čini Hrvatsku (ne)poduzetničkom zemljom" GEM Croatia 2019-2020.

<sup>16</sup>Luković, T. & Piplica, D. & Jurić, T.: "Zarobljeno društvo, korupcija i demografija", web bookstore Redak doo Split, Split 2022.

From the aforementioned analysis it can be concluded that the research hypothesis of this paper is accepted, because it is clear that the knowledge about management and especially about controlling and planning is at a very low level. In Croatia, the problem lies in the linguistic area, which leads to difficulties in management theory and in the understanding and theoretical elaboration of planning and controlling. On the other hand, planning has not developed in practice, and controlling, which exists in banks, highly categorized hotels and in a few state enterprises, is at a very low level of development and application. For politics and state administration, controlling is an unknown quantity, and planning serves only to fulfil the form. All this leads to significant differences in development between the two groups of EU economies, developed and in transition.

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