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# Cyber-Bullying and Cyber-Stalking in the Digital Area

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## Abstract

Digital area has helped the advancement in technology with the benefit of many ways in everyday life. This digital way of communication has also made harassment more frequent and undetected. This paper aims to identify, discuss and prevent stalking and bullying by avoiding traditional methods that are not any-more efficient. New challenges have raised for the identification and prevention of those phenomena and this paper will analyze them extensively.

In this paper it will be discussed and also examine the nature of Cyber-bullying and Cyber-stalking and their impact on the victim's mindset, in way that this study can help figuring out some means for preventing such online abuse.

*Keywords:* Digital area, Cyber-Stalking, Cyber-bullying, web, artificial intelligence.

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## 1. Introduction

Most generally, the term bullying is equated to the concept of harassment, which is a form of unprovoked aggression often directed repeatedly toward another individual or group of individuals. However, bullying tends to become more insidious as it continues over time and may be better equated to violence rather than harassment. Accordingly, Erling Roland states that bullying is "longstanding violence, physical or psychological, conducted by an individual or a group directed against an individual who is not able to defend himself in the actual situation."

Scandinavian researcher Dan Olweus, who is arguably most responsible for the current academic interest in the topic, defines bullying as "aggressive behavior that is intentional and that involves an imbalance of power. Most often, it is repeated over time." Tonja Nansel, a senior investigator at the National Institutes of Health, and her colleagues' define bullying as aggressive behavior or intentional "harm doing" by one person or a group, generally carried out repeatedly and over time and involving a power differential. Finally, the Minnesota Department of Education states that "definitions of bullying vary, but most agree that bullying includes the intent to harm, repetition, and a power imbalance between the student targeted and the student who bullies."

Cyberbullying is bullying that takes place over digital devices like cell phones, computers, and tablets. Cyberbullying can occur through SMS, Text, and apps, or online in social media, forums, or gaming where people can view, participate in, or share content. Cyberbullying includes sending, posting, or sharing negative, harmful, false, or mean content about someone else. It can include sharing personal or private information about someone else causing embarrassment or humiliation. Some cyberbullying crosses the line into unlawful or criminal behavior.

In the other hand, cyber-stalking is a type of cybercrime that uses the internet and technology to harass or stalk a person. It can be considered an extension of cyberbullying and in-person stalking. However, it takes the form of text messages, e-mails, social media posts, and other mediums and is often persistent, deliberate, and methodical.

Cyber-stalking often starts with seemingly harmless interactions that go on to become systematic in an annoying or frightening manner. Some even find the initial stage of cyber-stalking to be amusing and harmless, but it stops being fun anymore when the interactions do not end even after the recipient has expressed their displeasure and asked for the interaction to stop. The content that is directed at the victim's is often inappropriate and disturbing. A cyber-stalker might terrorize a victim by sending messages several times a day and from different accounts.

Cyber-stalking does not necessarily involve direct communication, and some victims may not even realize that they are the victims of online stalking. The victims can be monitored through various methods and the information gathered can be later used for crimes such as identity theft. Some stalkers even go as far as harassing the victim offline as well and even contacting their friends.

Some common characteristics of cyber-stalking behavior are tracking locations, breaching data privacy, monitoring online and real-world activities, obsessively tracking the victims' whereabouts, intimidating victims, etc. Social media stalking may include sending threatening private messages or faking photos.

Oftentimes, cyber-stalkers make false accusations, spread malicious rumors, create fake social media profiles or blogs, or create and publish revenge porn.

There might be a misperception that because it does not involve physical contact, cyber-stalking is not as severe as the physical form of stalking. This is not true in any case. The internet has become an integral part of everything that we do, be it personal or professional. This has only eased the way communications take place along with the increased access to personal information.

## 2. Legal definitions

Legally speaking, we define cyber-bullying as “willful and repeated harm inflicted through the use of computers, cell phones, and other electronic devices”. This definition is developed because it is simple, concise, and reasonably comprehensive and it captures the most important elements. These elements include the following:

- *Willful*: The behavior has to be deliberate, not accidental.
- *Repeated*: Bullying reflects a pattern of behavior, not just one isolated incident.
- *Harm*: The target must perceive that harm was inflicted.
- *Computers, cell phones, and other electronic devices*: This, of course, is what differentiates cyberbullying from traditional bullying

Part of the reason why bullying can be so emotionally or psychologically damaging is because it is repetitive. Those who are targeted actually have a relationship with the one doing the bullying, albeit a dysfunctional one. For example, targets of bullying often dread going to school because of what the other person might do that day. If the incident occurs/occurred one time, there is no such dynamic. We believe that the nature of cyberbullying makes it very likely that repetitive harm will occur. For example, imagine someone posts a particularly embarrassing picture of another person online in such a way that others can see it, link to it, and even leave public comments in reference to it. While the action of uploading the picture is a one-time behavior, others can view it or otherwise refer to it repeatedly, thereby resulting in recurring humiliation and shame to the target. One person might see it, or millions of people might see it.

Though not explicit in our definition, there is usually an imbalance of power in cyberbullying situations. We chose not to include it as a definitional component, because the type of power being exerted in cyberspace is somewhat amorphous and often shifting. While power in traditional bullying might be physical (stature) or social (wit or popularity), online power may simply stem from proficiency with or the knowledge or possession of some content (information, pictures, or video) that can be used to inflict harm. Anyone with any of these characteristics or possessions within a certain online context has power, which can be wielded through some form of cyberbullying. Indeed, anyone who can utilize technology in a way that allows them to mistreat others is in a position of power—at least at that moment—relative to the target of the attack. In addition, it is can be difficult to measure this differential.

Also, we must mention that society tend to explicitly focus attention on adolescents when we refer to cyberbullying. Many people use the term bullying to refer to a wide variety of behaviors between individuals of varying ages. Though, that it is more appropriate to reserve the term bullying, and therefore also cyberbullying, for the kinds of behaviors we describe below as they occur between adolescent peers. While these behaviors often occur among adults as well, it is not usually proper to call the incidents bullying. Also, cyberbullying can harm the online reputations of everyone involved – not just the person being bullied, but those doing the bullying or participating in it.

In the other hand, we take as example one of the more exhaustive definitions of cyber-stalking, the California Penal Code Section 646.9 that describes cyber-stalking as a variation of traditional stalking. It is defined as follows:

- *“Any person who willfully, maliciously, and repeatedly follows or harasses someone and makes a credible threat with the intent to place the victim or their family in reasonable fear for their safety is guilty of the crime of stalking.”*

Individuals charged with stalking at large are accused of purposefully and repeatedly harassing a particular person. In turn, parties charged with cyber-stalking allegedly engage in similar behaviors. The setting in which these behaviors allegedly occur varies but can include social media platforms, email servers, and even workplace chat-rooms.

“Harassing” under the context of this statute means you engaged in willful behavior directed at the victim that annoyed or tormented them for no legitimate purpose.

The behaviors that California law considers indicative of cyber-stalking include mass-following repeated direct messaging and “doxxing” a person’s personal information.

It is these alleged behaviors, combined with what the prosecution calls a “credible threat to another individual” as defined by California Penal Code Section 646.9(g), that can see a person face both jail time and fines. A person can face cyber-stalking charges for a myriad of reasons. Because the Internet is so difficult to legislate, engaging with someone may be seen as violating that individual’s right to privacy. That said, each person online and operating from within the United States is entitled to certain protections, particularly those that cover freedom of speech.

Examples of cyber-stalking include sending unsolicited harassing emails, text messages, or posting embarrassing information or pictures online.

What, then, should someone do if they face cyber-stalking charges? For a prosecutor to prove that a case of chargeable cyber-stalking has occurred, they have to prove all the elements of the crime that include:

- You willfully and maliciously harassed someone,
- You made a credible threat to them that caused reasonable fear to the victim or their family,
- You communicated by using the internet or other electronic device.

Depending on the breadth of evidence brought forward in a legal complaint, a person accused of cyber-stalking may face misdemeanor or felony charges. Misdemeanor charges for an individual without an existing criminal history can include one year of jail time and up to \$1,000 in fines. The same consequences apply to those individuals accused of cyber-stalking with a criminal record. Depending on the details, cyber-stalking can be filed as either a misdemeanor or felony case. Felony charges are slightly more severe. Individuals facing felony cyber-stalking charges may see up to 3 years in state prison if convicted.

Individuals with criminal records charged with cyber-stalking may face a prison sentence of up to five years, with registration requirements remaining the same. Convicted cyber-stalking defendants could also be ordered to participate in counseling and even confinement in a state-run mental illness. Further, a defendant will usually face a restraining order against them prohibiting contact with the victim.

### **3. Cyber-bullying and cyber-stalking characteristics.**

First of all the behavior is intentional and purposed rather than accidental or inadvertent. Accidents happen all of the time on the playground, and some of these result in physical harm. Still, most people recognize that accidental or unintentional behaviors do not constitute bullying. Most state bullying laws explicitly include an element of intent. For example, Delaware law characterizes bullying as an “intentional written, electronic, verbal or physical act. Louisiana defines cyberbullying as “the transmission of any electronic textual, visual, written, or oral communication with the malicious and willful intent to coerce, abuse, torment, or intimidate a person”. Indeed, intent is generally a fundamental component of criminal law. In order to hold someone criminally responsible, not only must we establish that the person engaged in a wrongful act, but that he or she did so with mens rea, that is, a guilty mind. When it comes to law there are always exceptions, and we believe that the vast majority of bullying incidents can and should be handled outside of the formal law. The point is that most academic and legal definitions of bullying include intent.

Second, bullying necessarily involves maliciousness on the part of the aggressor, and that maliciousness is one type of violence. Researchers have attempted to categorize various types of bullying violence in multiple ways. Some have focused on differentiating between direct aggression and indirect aggression. Direct aggression involves physical violence hitting, kicking, taking items by force and verbal violence taunting, teasing, threatening. Indirect aggression includes more subtle, manipulative acts such as ostracizing, intimidating, or controlling another person. Others have focused on distinguishing between overt and covert (relational) forms of aggression. Overt aggression might involve name-calling, pushing, or

hitting, while relational aggression includes gossip, rumor spreading, social sabotage, exclusion, and other behaviors destructive to interpersonal relationships.

Third, one instance of aggression is not sufficient to qualify as bullying; to be considered bullying, behavior must occur, or present the threat of occurring, on a repetitive basis. This is one of the features that distinguishes bullying from other forms of peer harassment. We should clarify that just because a hurtful behavior only happens once doesn't mean that it should be ignored. It just means that it isn't accurate to refer to it as bullying. But part of the reason bullying can be so emotionally or psychologically damaging is because it is repetitive. The repetitive nature of bullying creates a dynamic where the victim continuously worries about what the bully will do next. Indeed, the target often alters his or her daily behaviors to avoid personal contact with the bully because it is assumed that something bad will happen if they interact.

Fourth, inherent in any conception of bullying is the demonstration or interpretation of power by the offender over the target. If both parties were equal socially, physically, or otherwise, one might think that neither has the proverbial upper hand. With differential levels of power, though, bullying can occur. Many characteristics can give a bully perceived or actual power over a victim, including popularity, physical strength or stature, social competence, quick wit, extroversion, confidence, intelligence, age, sex, race, ethnicity, or socioeconomic status. And even more relevant to the primary topic of this text, technological proficiency can imbue a person with power over another. Youth who are able to skillfully navigate online environments or who know how to cover their virtual tracks have a leg up on a newbie who doesn't fully understand how to set up their accounts properly, or how to identify the authors of hurtful content.

Cyber-stalkers use a variety of tactics and techniques to humiliate, harass, control, and intimidate their victims. Many cyber-stalkers are technologically savvy as well as creative in their ways. Here are some examples of how cyber-stalking might take place:

- Posting offensive, suggestive, or rude comments online
- Sending threatening, lewd, or offensive emails or messages to the victim
- Joining the same groups and forums as the victim
- Releasing the victim's confidential information online
- Tracking all online movements of the victim through tracking devices
- Using technology for blackmailing or threatening the victim
- Excessively tagging the victim in irrelevant posts
- Engaging with all online posts made by the victim
- Creating fake profiles on social media to follow the victim
- Posting or distributing real or fake photos of the victim
- Excessively sending explicit photos of themselves to the victim
- Making fake posts intended to shame the victim
- Repeatedly messaging the victim
- Hacking into the victim's online accounts
- Attempting to extort explicit photos of the victim
- Sending unwanted gifts or items to the victim



- Using hacking tools to get into the victim's laptop or smartphone camera and secretly record them
- Continuing harassment even after being asked to stop

The various kinds of cyber-stalking that are prevalent are cat-fishing; the creation of fake profiles or copying of existing ones on social media to approach victims; monitoring check-ins on social media; keeping an eye on the activities of a victim on social media to accurately gauge their behavior pattern; spying via Google Maps and Google Street View; using Street View to spy on a victim and find their location from posts or photos on social media; hijacking webcam; webcams can be hijacked by introducing malware-infected files into the victim's computer; installing stalker-ware; stalker-ware tracks the location, enables access to texts and browsing history, makes audio recordings, etc., without the victim's knowledge; tracking location with geo-tags. Digital pictures mostly have geo-tagged with the time and location of the picture if it is in the metadata format, which makes it easier for stalkers to access that information by using special apps.

Cyber-stalking is no different than stalking and leads to consequences that can be detrimental to the victims both physically and mentally. Victims who are harassed online experience fear, anger, confusion, and insomnia along with other health issues. Cyber-stalking affects the overall well-being of victims. They often suffer from anxiety, distress, depression, PTSD, and suicidal ideation.

#### **4. Difference between Cyber-stalking and Cyberbullying**

Here you will know what is cyberbullying and cyber-stalking is and the differences between them. In cyber-stalking, the victim is harassed online through electronic communication devices, instant messaging, social networks, discussion groups, etc., for the purpose of revenge, anger, or control. A stalker may be a stranger or an acquaintance of the victim. Cyberbullying is mostly when a child, preteen, or teen is harassed, humiliated, tormented, threatened, embarrassed, or targeted through the internet, interactive and digital technologies, or electronic devices by another individual of the same age range. If adults are involved, it is considered cyber-harassment or cyber-stalking.

Cyberbullying happens in a repeated, deliberate, and hostile manner. It can be as simple as repeatedly sending emails, texting, or harassing someone. Cyberbullying may involve repeated public threats; hate speech, pejorative labels, or defamatory false accusations; sexual remarks; ganging up on a victim by ridiculing them in online forums and discussions; hacking into or vandalizing sites and posting false statements about a victim to discredit or humiliate them; identifying victims of crime personally and publishing content meant to severely defame or humiliate them and posting rumors about the victim online to convince others to dislike or participate in their online denigration.

#### **CONCLUSION**

Cyberbullying and cyber-stalking are one of the products of advanced technology in the modern era. Anyone can quickly become the offender as well as victims of cyberbullying and cyber-stalking crimes. Although these cyber-crimes are traditional crimes as-well, bullying and stalking have similarities in some aspects with the traditional crimes, but there are also significant differences between them. Cyberbullying and cyber-stalking can be physically far removed from their victim. It is much easier for a cyber-stalker to encourage "innocent" third parties to harass or threaten a victim. Cyber-stalkers do not need to confront the victim physically. However, with the prevalence of cybercrimes and the negative impact brought on the victims' well-being, these crimes should be taken seriously by the legal authorities and victim assistance professionals.

Like a double-edged sword, the development of technology does bring us numerous convenience and benefits, and it also carries some challenges. The challenges facing law enforcement when they investigate cyberbullying and cyber-stalking cases include: lacking awareness and skills in recognizing and investigating, jurisdictional and statutory authority limitation and difficulties to obtain Internet account information of suspects. Hence, the research proposes possible suggestions as follows raising the awareness on cyberbullying and cyber-stalking for the public and law enforcement are essential in execution; boosting cooperation between the ISP's and law enforcement and take advantage of their expertise; redefining these cyber-crimes, tackling the jurisdictional issue, and regulating Internet Service Provider's legal accountability in relevant laws are critical in legislation.

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# Evaluation of tourist-recreational resources in the background of climate change in Georgia

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## Abstract

An important problem of modernity is the protection of the environment from negative anthropogenic activities and the rational use of natural resources. It's due to the fact that in today's conditions, both ecologically and materially, it is impossible to make the right decisions without taking into account environmental conditions.

At the same time there are some of the main factors of natural resources and environmental degradation:

1. Degradation of the main components of the biosphere, which causes a decrease in biodiversity and a decrease in self-regulation;
2. Climate change
3. Growth of environmental damage caused by natural disasters;

This article discusses the impact of climate and its changes on the development of the tourism sector in Georgia. To evaluate tourism-recreational resources in Georgia for the first time several the Tourism Climatic Indexes were used, based on the combination of different meteorological elements (air temperature, atmospheric precipitation, relative humidity, average duration of sunshine).

On the basis of the obtained data, correct decisions should be made when designing tours in different climatic zones against negative climatic events.

The World Meteorological Organization (WMO) has organized a number of events to support tourism. It provides World Tourism Organization (WTO) members with early warnings about natural disasters, glacier recession, water resources and climate change. WTO closely cooperates with WMO. Forecasts of climate and extreme hydro meteorological events provided by the National Hydro Meteorological Services are particularly important in today's world, as regional climate variations have emerged in the wake of global climate change.

*Key words:* Climate change, Tourism Climatic Index, Glacier recession, World Tourism Organization (WTO). Natural resources, Tourism industry.

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## Introduction

The dynamism of the tourism industry hinges fundamentally on geographical location, topography, vegetation, and prevailing weather and climate conditions. Weather and climate play a pivotal role in shaping the bioclimatic resources that drive the tourism industry [1]. Consequently, the study and understanding of these bioclimatic resources are pivotal for both the organization and advancement of the tourism sector.

The climate exerts a dual influence on tourism, directly and indirectly impacting tourists and their choices. Adverse climatic conditions and their fluctuation can substantially influence tourist influx and the temporal patterns of tourism activities. This seasonality, intrinsically tied to climatic variations, reverberates through the tourism sector, necessitating an in-depth examination of the nexus between climatic conditions and the formation of tourism products. Further, it engenders the development of strategic measures to mitigate the resultant seasonal imbalances [2].

## Main Text:

The edifice of tourism-recreational resources includes climate as a fundamental pillar. In 2008, a pivotal resolution endorsed by the World Meteorological Organization (WMO) and the World Tourism Organization (WTO) underscored the imperative for their member countries to evaluate the potential of tourism and recreational resources across diverse

tourism regions [1]. This necessitates the development of commensurate recommendations to enhance the tourism industry. Regrettably, Georgia, a member state in both these organizations, has not yet concretized the assessment of climate potential according to global tourism benchmarks. This deficiency has the potential to adversely affect Georgia's capacity to attract prospective tourists [3].

To evaluate the tourism-recreational resources in Georgia, this article introduces the Tourism Climatic Index (TCI) [4]. This innovative methodology amalgamates diverse meteorological parameters—comprising air temperature, atmospheric precipitation, relative humidity, and average sunshine duration [5]. TCI emerges as a novel tool, offering annual values and facilitating a nuanced understanding of tourism resources across varying seasons and months. However, it is crucial to underscore that TCI's scope remains incomplete as it fails to encompass the vital thermophysiological component—essential for a holistic evaluation of tourism-recreational resources [6].

In order to comprehensively investigate the impacts of climate change on the tourism sector, the article introduces the Holiday Climate Index (HCI) [7]. This intricate metric, drawing from a plethora of meteorological elements, was meticulously crafted. It rectifies the limitations of the conventional Tourism Climate Index (TCI) [8]. Notably, HCI accommodates diverse climatic requisites across an array of tourism segments and destinations, ranging from urban to mass tourism. The five critical climatic variables it incorporates are maximum air temperature (°C), relative humidity (%), cloud cover (%), precipitation (mm), and wind speed (m/s). The Holiday Climate Index (HCI) score is computed via the following formula:

$$\text{HCI} = 4 * T + 2 * A + 3 * Rd + W [7].$$

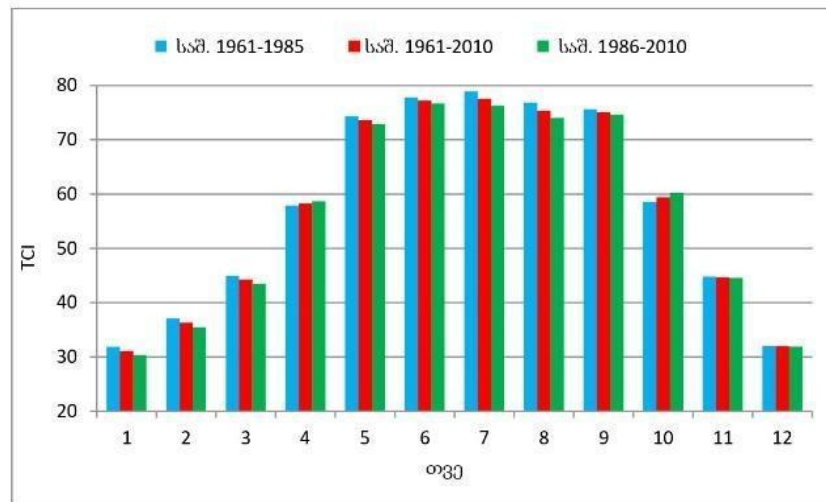
Table 1: HCI Categories and Rating

HCI Score	Rating	Category
90 – 100	1	Ideal
80 – 89	2	Excellent
70 – 79	3	Very good
60 – 69	4	Good
50 – 59	5	Acceptable
40 – 49	6	Marginal
30 – 39	7	Very unfavourable
20 – 29	8	Extremely unfavourable
10 – 19	9	Impossible
- 30 – 9	10	Impossible

The study parameters were compared for two 30-year periods, I (1961–1985) and II (1986–2010) using the Student's criterion when  $\alpha \leq 0.15$  [9]. To delineate the impact of climate change on the assessment of tourist and recreational resources, the complex climatic indices of tourism were scrutinized not only across regions with vastly different climates such as Adjara and Kakheti but also in touristic mountain and ski regions, encompassing Borjomi-Bakuriani, Mtskheta-Mtianeti, and Svaneti [10]. The analysis of data employed robust mathematical statistical methods [11].

In Mestia, the monthly HCI scores for the period between 1961 and 1985 oscillated between 34 (classified as "unfavorable" in January) and 95 (categorized as "ideal" in September-October). The mean monthly HCI values ranged from 56.2 (classified as "acceptable" in January) to 83.5 (classified as "excellent" in August). Significantly, an overarching negative trend was discerned in the average monthly HCI in Mestia across the entire observation period [12].

Figure 1: Holiday Climate Index in Mestia in Three Observation Periods



The recurrence of HCI categories over the three observation periods reveals that, between 1961 and 2010, the highest repetition of the HCI index fell within the "excellent" category (29.3%), while the least repetition occurred in the "unfavorable" category (0.1%). Notably, favorable bioclimatic conditions prevailed in Mestia across all three observation periods [12].

Despite the extensive utilization of TCI, some scholars have voiced their reservations. Critics argue that TCI is beset by four primary weaknesses: (1) a subjective framework for assessing and weighing climate variables, (2) an overlooking of the potential to mitigate the influence of climatic parameters (e.g., rain and wind), (3) limited temporal resolution of climate data, and (4) an insensitivity to the evolving climate requisites of major tourism segments and destinations, such as coastal, urban, and winter sports tourism [13].

In a concerted effort to surmount these limitations, this article introduces the Holiday Climate Index (HCI) [7], designed to offer a more comprehensive evaluation of climatic suitability for tourists. The appellation "Holiday" was consciously chosen to reflect the index's intended use, aligning it with the broad definition of tourism: "Tourism is a social, cultural, and economic phenomenon involving the movement of people between countries and places outside their normal environment for personal or business/professional purposes" [14].

Conclusion:

Our comprehensive analysis reveals that the anticipated climate change in Georgia is unlikely to exert a significant impact on the tourism sector's bioclimatic resources, as assessed through the HCI. Any alterations are expected to be marginal or incremental. Consequently, it can be posited that bioclimatic conditions in Georgia have remained remarkably stable, and substantial shifts in the foreseeable future are improbable.

To unlock the full potential of Georgia's resort and tourism industry, a more detailed exploration of the bioclimatic resources in distinct regions is imperative. Such an endeavor would empower the nation to make optimal use of its natural resources, elevating the quality and appeal of various tourism segments. By meticulously harnessing these climatic insights, Georgia stands to further bolster its position as a sought-after destination in a dynamic global tourism landscape.

In summary, this article underscores the intrinsic importance of climate considerations in the tourism sector and introduces innovative metrics to evaluate tourism-recreational resources. The endeavor aligns with global discussions on sustainable tourism development and reinforces the significance of climate resilience in the evolution of the tourism industry.

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# The contribution of the European Union in the consolidation of the Judicial System in Albania (1990-2023)

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## Abstract

The principles of the Magna Carta have laid the theoretical fundamentals of a democratic state. The division of powers into legislative, executive, and judicial is consolidated in the Constitution of the Republic of Albania, though the implementation leads to continuous challenges. After the autocratic regime Albania was certain of its political integration towards European Union. The prerequisites by EU, in these thirty years of integration process have assist the democratization process of Albania, special focus on the Judicial System. The role of EU institutions, its recommendation and requirements highlighting what needs to be improved throughout the years need to be evaluated as the central point of the democratization process of the country. The paper reflects on the progress Albanian Judicial System under the European Union observation.

*Keywords:* Judicial system, Democracy, Integration, European Union

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## 1. Introduction

Beginning in the early 1990s, Albania's journey toward EU membership has been a remarkable and transforming experience. When Albania emerged from the long-lasting political shadow of a communist state, it began an ambitious and complex process of social, economic, and political transformation. The country's steadfast dedication to democratic principles was demonstrated by the development of a strong multiparty system, and the holding of its first non-communist elections in 1992 marked a significant turning point. In the decades that followed, Albania showed initiative in bringing its institutions and legal system into compliance with the strict guidelines established by the EU. This promise was fulfilled in 2006 with the signing of the Stabilization and Association Agreement, a crucial turning point in the process.

## 2. The challenges of the Integration Process after the year 2000

An important turning point in Albania's history was the decade after the 1990s transitional era, which was marked by the country's primary political goal of gaining EU membership (Cuci, 2014). In the first ten years of democracy, Albania demonstrated a resolute dedication to change by implementing a variety of policies, including legislative, economic, and political changes that were carefully crafted to conform to EU norms. One of the most significant events was the signing of the Stabilization and Association Agreement in 2006, which demonstrated Albania's commitment to the EU membership process. Simultaneously, the country's 2009 entrance to NATO demonstrated its wider convergence with the values of the Euro-Atlantic community while also guaranteeing regional security.

The overarching narrative of this era is one defined by notable milestones and persistent efforts, emblematic of Albania's intentional and methodical pursuit of European integration. Beyond the immediate goal of EU accession, this period reflects Albania's broader aspiration to contribute to the cultivation of stability, prosperity, and shared values within the expansive and diverse tapestry of the European community. As Albania continues its path of integration, the lessons learned, and the resilience demonstrated during this transformative decade serve as a testament to the nation's enduring commitment to fostering a future intricately interwoven with the principles and ideals of the broader European family.

## 3. Ongoing issues through the integration of Albania towards EU

In the ten years starting in 2010, Albania advanced its goals of joining the European Union (EU), building on the groundwork laid by the previous decade. The country demonstrated its dedication to development by systematically putting into effect broad reforms that covered the complexities of the political, economic, and legal spheres. This deliberate

endeavor was supported by a careful conformity to the strict guidelines and directives outlined by the EU, indicating Albania's sincere desire to conform to the wider European framework (Sina & Vasjari, 2013). The formalization of Albania's application for EU membership in 2014 marked a turning point and demonstrated the nation's unwavering commitment to the intricate and varied integration process (Fetahu, 2014).

Over the course of this long period, Albania set itself apart by achieving notable progress in addressing issues related to governance, corruption, and the rule of law. Acknowledging these significant developments, the EU praised Albania's steadfast dedication to reform and general advancement. In 2018, Albania reached a crucial turning point in its EU integration journey as the European Commission proposed the start of accession negotiations, recognizing the country's remarkable progress. Albania persisted in its relentless march toward EU integration despite sporadic obstacles and criticism. The country showed perseverance in the face of adversity and skillfully navigated through complexity, reaffirming its hopes for a future firmly rooted in the values of European cooperation and solidarity. This time bears witness to Albania's unwavering commitment to promoting a future deeply entwined with the EU's objectives and principles as its story is told within the larger European context.

#### **4. The contribution of the European Union in the democratic consolidation of the State**

The European Union (EU) has significantly contributed to various sectors in Albania, demonstrating its dedication to advancing the country's development and fostering closer relationships. Albania has benefited extensively from the EU's substantial financial contributions through diverse funding programs (Totozani, 2016). These funds are directed towards bolstering economic development, supporting infrastructure projects, and enhancing social programs, thereby contributing to Albania's overall growth (Rama, Gabriel: Germany strong supporter of Albania's EU integration, n.d.). Stabilization and Association Process: The EU's Stabilization and Association Process (SAP) facilitates Albania's entry into the EU. This entails discussing the terms and requirements for accession in the Stabilization and Association Agreement (SAA). The SAP acts as a guide for putting institutional, political, and economic reforms into action. Support for Reform: The EU actively assists Albania in carrying out important reforms, especially in areas like public administration, the judiciary, the rule of law, and anti-corruption initiatives. The European Union offers technical support, knowledge, and direction to bring Albania's institutions into compliance with EU regulations. Political communication on a regular basis between the EU and Albania is essential for talks about human rights, governance, and regional cooperation.

This ongoing dialogue serves as a vital mechanism for monitoring progress, addressing challenges, and fostering a closer relationship (Goxha, 2016). As part of the integration process, the EU grants Albania access to its Single Market, presenting opportunities for trade and economic growth for Albanian businesses. This access is instrumental in developing the private sector and enhancing economic resilience. The EU actively supports cross-border cooperation initiatives between Albania and neighboring countries. This collaborative effort aims to strengthen regional stability, improve connectivity, and address shared challenges such as environmental issues, organized crime, and migration. The EU provides crucial assistance to Albania during times of crisis, including responses to natural disasters or health emergencies. This support contributes to building resilience and underscores the EU's commitment to standing by its partners during challenging periods. The EU fosters people-to-people contacts, cultural exchange, and civil society engagement. Numerous programs encourage cooperation between Albanian and EU citizens, promoting a sense of shared values and mutual understanding. The EU's contributions to Albania are diverse and encompass a comprehensive approach focused on promoting stability, economic development, and democratic governance in the region (Fondi Shqiptar i Zhvillimit, n.d.). These efforts align with the broader objectives of European integration, emphasizing the strengthening of bonds between the EU and its neighboring countries.

The European Union's (EU) consistent and varied contributions have had a major influence on the development of Albania's legal system. Acknowledging the indispensable function of a strong and autonomous court in promoting democratic governance, the European Union has proactively undertaken cooperative endeavors to fortify and revamp Albania's judicial establishments. Financial support for the execution of crucial changes inside the Albanian judicial system is one of the main foundations of the EU's contribution (Totozani, 2016). The efforts targeted at improving the judiciary's accountability, transparency, and efficiency have received this funding. The European Union has endeavored to establish a more robust and efficient legal system through investments in infrastructure, technological innovations, and the development of legal professionals' capabilities. Furthermore, the EU has played a crucial role in assisting Albania in implementing a thorough reform program that has addressed structural problems that have traditionally jeopardized the independence of the legal system (Shahu, 2019). The main goals of reforms have been to strengthen the rule of law, fight corruption, and create a setting that supports impartial and fair legal procedures. In order to align Albania's judicial processes with European norms, institutional restructuring and legislative amendments have been shaped in large part by the EU's advice and assistance.



Another important part of the EU's assistance to Albania's judicial consolidation has been capacity building. The EU has tried to improve the abilities and expertise of judges, prosecutors, and other legal professionals through training programs, workshops, and exchanges. By placing a strong focus on ongoing professional development, the court will be better prepared to tackle complicated legal issues and the system will operate with a higher degree of professionalism and competence. Beyond internal reforms, the EU and Albania are working together. Additionally, the EU has been instrumental in promoting regional collaboration and the sharing of best practices among the Western Balkan judicial systems. This more comprehensive viewpoint aims to provide a common understanding of European legal norms while acknowledging the interdependence of the legal systems in the area. The EU continues to play a crucial role in the strengthening of the legal system as Albania moves closer to EU integration. Continued collaboration demonstrates a dedication to maintaining the values of accountability, openness, and the rule of law. In the end, the EU's many initiatives in this area support Albania's judicial institutions while also fitting with the larger goal of promoting democratic ideals and the rule of law throughout the European Union.

#### 4. Conclusions

The European Union plays a central role as a major contributor to the ongoing justice reform in Albania, actively supporting the country's endeavors to enhance its judicial system. The EU's commitment to the rule of law and democratic values is evident in its assistance, aimed at aligning Albania's legal framework with European standards. By doing so, the EU facilitates the establishment of a judiciary that adheres to principles such as fairness, impartiality, and accountability, fostering an environment conducive to the effective administration of justice.

In addition to emphasizing the importance of judicial independence, the EU contributes significantly to capacity building within the Albanian justice system. Through targeted initiatives, the EU conducts training programs for judges, prosecutors, and other legal professionals, enhancing their skills and knowledge. This strategic support aims to empower legal practitioners to address intricate legal challenges competently, reinforcing the foundations of a robust and proficient judicial system. The EU's multifaceted involvement, spanning anti-corruption measures, legal and institutional reforms, and continuous monitoring, underscores its integral role in promoting a transparent, accessible, and reliable justice system in Albania.

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# Apollonian Values among Gen-Z

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## Abstract

In this paper, we have studied the Apollonian values of Gen-Z. As in other developed countries, value orientations in Slovenia also change with age. Key changes occurred during the transition from traditional to modern, and then to postmodern information society. Differences in values and views are perceived through the generations. Therefore, in our paper, the research question was about how Gen-Z evaluates its Apollonian values. We conducted the research with the help of an anonymous online questionnaire, which included a set of questions related to values. The set was intended for self-assessment of values, according to Musk's scale. 306 undergraduate students from all over Slovenia were included in the research, of which 144 men and 162 women participated in the research. Data collection took place from March 2020 to April 2023. Through the analysis of the collected data, based on the students' self-assessments, we have determined what the assessments of Apollonian values among Gen-Z are. We conclude the paper by giving our opinion based on the findings of the research.

*Keywords:* Gen-Z; values; Apollonian values; HRM; leadership; management.

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## 1. Introduction

As elsewhere in the developed world, value orientations are changing in Slovenia as well. Each individual's values change during different life periods (Schwartz, 2005). Pandžić (2010) believes that the postmodern era is characterized by the breakdown of values or the so-called crisis of values among young people. The reason for this is the character of today's youth values, which are quite fluid and changeable. Ule *et al.* (2000), however, describe that the values of young people are a component of youth scenes and their everyday life. They are not ideals, but lifestyle patterns that young people acquire in trading with various lifestyle offers. Thus, in our research, we were interested in which values prevail among Gen-Z.

Differences in values and views are perceived through the generations. Therefore, in our paper, we ask the research question of how Gen-Z evaluates its Apollonian values. Through the analysis of the collected data, based on the students' self-assessments, we determine what the Apollonian values of Gen-Z are.

## 2. Body of Manuscript

Each individual passes from one life period to another throughout life. Adolescence covers the period when a young person is no longer a child, but is not recognized as an adult. It is an intermediate period between two defined life cycles - childhood and adulthood, and youth is often a difficult period where a person encounters contradictions and conflicts caused by the status of a member of society. Difficulty is also expressed in values (Pandžić, 2010). Values in modern times represent the foundation of social socialization. In everyday life, people often live beyond the norms and rules that society dictates to us. Values change in the course of life and depend to the greatest extent on the culture of the organization in which we are educated or work, as each organization has its own goals, norms and values (Peršuh, 2011).

There are many theorists who have different views on human values. Musek (2015) defines his scale of values, which covers four levels of hierarchical structure. The mentioned model or scale is built in such a way that at the top of the hierarchy there are two groups of the largest scale, namely Dionysian and Apollonian values. Only these are further divided into two larger value categories each. So Dionysian values are divided into two value types, the hedonic and the potential type. Apollonian values on the moral and fulfilling type.

Values are a part of an individual's attitudes, so everyone can determine for themselves how their life will proceed (Lanier, 2017). Tiberius (2018) states that every individual has their own hierarchy of values, with which they shape their life. This hierarchy affects our well-being, as these values activate our emotions, motivation, and cognitions. The development of values is influenced both by the family and the broader social environment, with which the individual comes into contact at school, in their free time, and through the media. Adolescents may fully or partially adopt the values they encounter, and these values can change throughout life, despite their relative stability (Furlan, 2003).

It is necessary to distinguish values from concepts such as needs, motives, attitudes, and ideals. Values differ from needs and motives in that they are deep-seated and woven into the core of one's personality, and in comparison, to needs, they are conscious (Marolt, 2008). The difference between values and attitudes lies in the fact that the position of values is more general and central compared to attitudes, which relate to specific objects and phenomena. Ideals thus represent the highest level of perfection (Musek, 2000). Perfection cannot be equated with values, as values always represent something desirable, but perfection is not always desirable. At this point, value and ideal intertwine, as some ideals are also motivational goals, but it is necessary to know the difference and to differentiate values and ideals from each other (Marolt, 2008).

Values can be defined in a general way, also as a concept and belief, or the motives and interests of each individual (Zander, Jonsen and Mockaitis, 2016). Values are also our orientations and a relatively permanent conception of an individual's goals, which only he highly values and respects. They dictate the way of life or behaviour of each individual. An individual's values develop and change throughout the entire life span (Meglino and Ravlin, 1998). Toš and Toš (2005) believe, that values are a criterion for choosing, evaluating actions, events and classifying them as good and bad, worthy of trust and always in the direction of setting goals. Pogačnik (2002), however, believes that values are a psychological concept that has always included an individual's conscious idea of what is desirable and what is not. Jurše (2003), on the other hand, justifies values as rooted ideas that serve as the basis of norms for the social acceptance of established rules, standards and behavioural models. Thus, we can summarize that all values researchers have in common that they define values as individual behaviour and its contribution to society, sustainability and, last but not least, guide our interests and behaviour.

In the group of Apollonian values, there are values that represent the perfection of harmony. These include religious values, spiritual values, traditional, moral, ethical, societal, altruistic values, democratic and progressive values, cultural and humanistic values, and the values of self-formation (Musek Lešnik, 2008). Therefore, these are ideals that are beyond the value of personal satisfactions, excluding values associated with success and effectiveness. Values related to moral norms, duties, and those associated with personal and spiritual growth, fulfilment, and transcendence are evident (Musek, 1993).

Each generation has its own values. Young people aged 14 to 25 change a range of values, after which values stabilize somewhat, as the older we get, the less we change our values. We thoroughly change our value scale only when exposed to strong challenges, such as illness, death, divorce, job loss, and similar events (Račnik, 2016).

According to the definition, Generation Z is born after 1995 up to 2010 (Lanier, 2017). Gen-Z is the most ethically diverse, tech-savvy, adaptable, and flexible in all areas of life, and does not lack confidence and resourcefulness (Becton, Walker and Jones-Farmer, 2014). Gen-Z has a need to be heard (Slavin, 2015). Jurišević Brčić and Mihelič (2015) note, that Gen-Z is very concerned about environmental issues, aware of the importance of the scarcity of drinking water, which shows they have a high sense of responsibility towards natural resources.

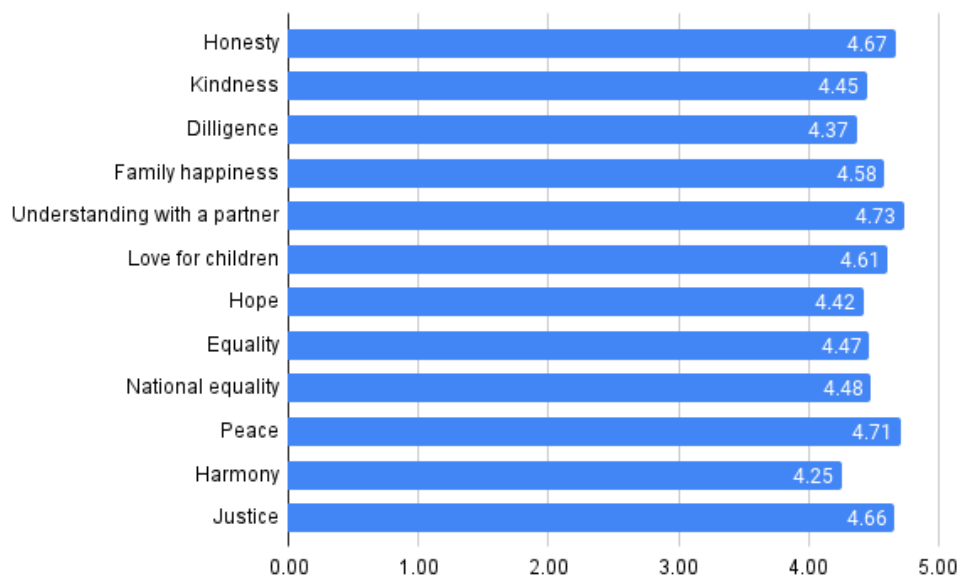
Generation Z is the youngest generation that has already entered the workforce, but not yet fully, as currently only the oldest representatives of this generation are present in the labour market, while the younger ones are still in the process of education (Račnik, 2016). This generation is known as the digital generation, forming their networks of acquaintances through various online networks (Lanier, 2017). The internet is their primary source of information and means of finding answers to questions, enabling independence and unlimited exploration. They grew up spending their free time online and living in a virtual reality, which influenced the formation of their interests, characteristics, and values (Ovsenik and Kozjek, 2015). Gen-Z is technologically savvy, individualistic, entrepreneurial, financially conscious, and multitasking. They favour ethical work, a workplace with personal autonomy that allows for a balance between professional and private life, but they also require control and feedback (Bulut and Maraba, 2021).

## 5. Research

The aim of the research was to find out how Gen-Z evaluates its Apollonian values. We conducted the research with the help of an anonymous online questionnaire, which included a set of questions related to values. The set was intended for self-assessment of values, according to Musk's scale. 306 undergraduate students from all over Slovenia were included in the research, of which 144 men and 162 women participated in the research. Data collection took place from March 2020 to April 2023.

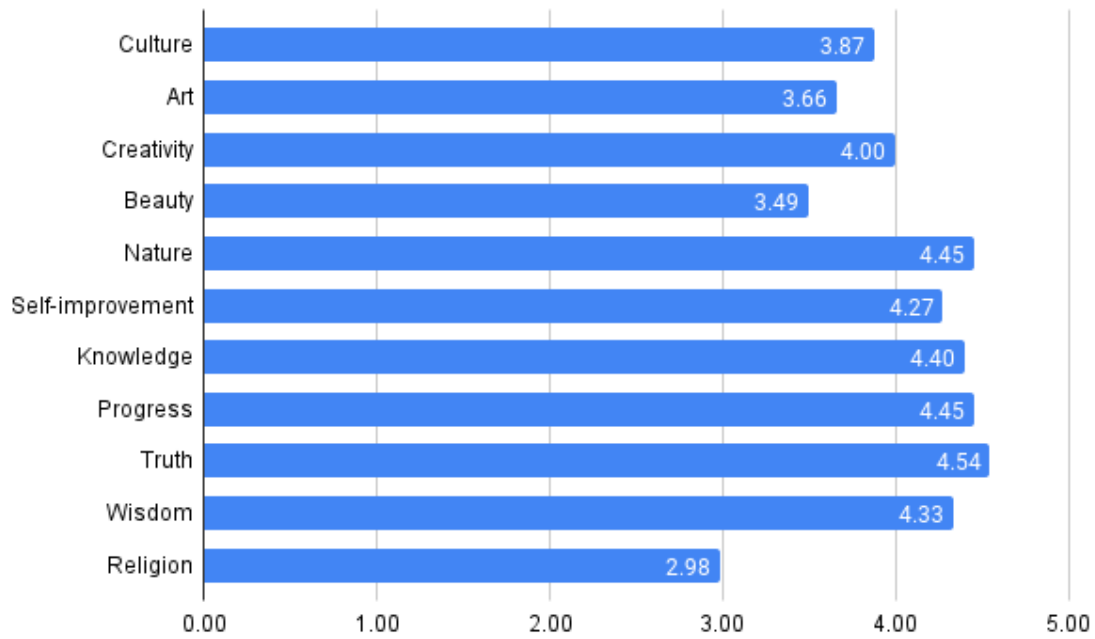
In the following three graphs, we will present the individual results of the average values of two sets of Apollonian values among Gen-Z and the total average value of both types of Apollonian values among Gen-Z. Respondents evaluated the set of self-assessment values using a five-point scale, which means 1 (not important at all) to 5 (completely important).

Figure 1 shows the calculation of average values among a set of moral-type values, which is a subset of Apollonian values. In this section, we will present the average values of twelve values. The highest-rated average value in this group is the value of 'understanding with a partner' (4.73), followed by 'peace' (4.71), then 'honesty' (4.67), in fourth place is 'justice' (4.66), followed by 'love for children' (4.61), in sixth place is 'family happiness' (4.58), followed by 'national equality' (4.48), 'equality' (4.47), 'kindness' (4.45), 'hope' (4.42), the second-lowest average value in this set is 'diligence' (4.37), and the lowest average value is 'harmony' (4.25).



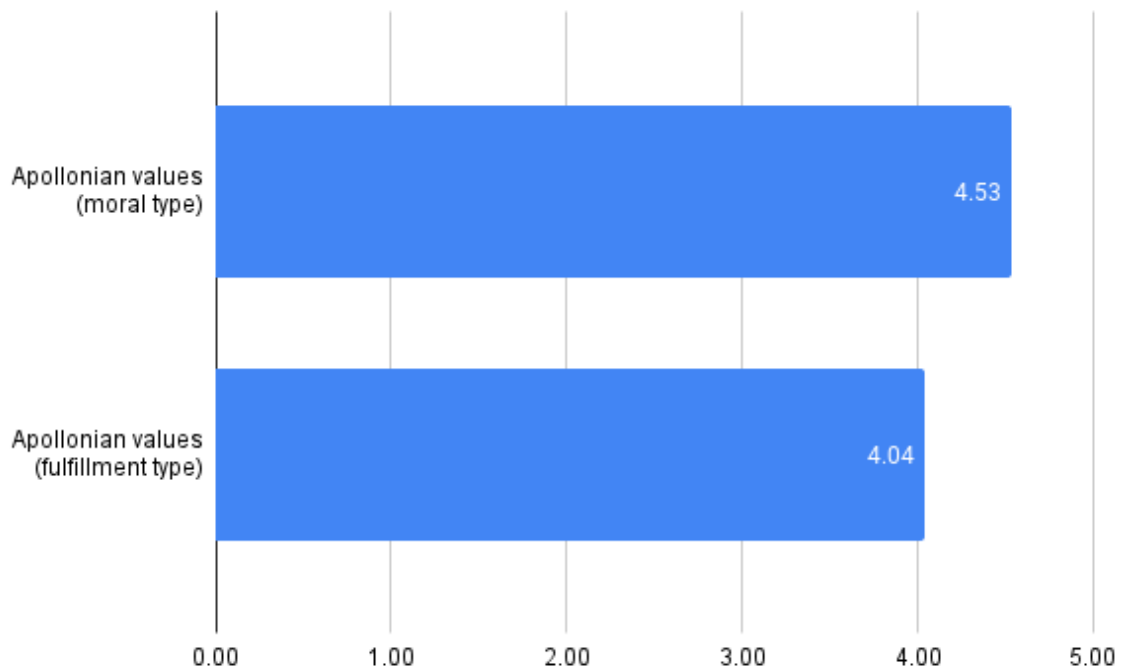
**Figure 1.** The average values of the respondents' self-assessment of the moral type of values, which are a set of Apollonian values.

Figure 2 shows the calculation of average values for eleven fulfilment-type values, which belong to the group of Apollonian values. The highest average value belongs to the value 'truth' (4.54), followed by 'nature' and 'progress' (4.45), in fourth place is 'knowledge' (4.40), followed by 'wisdom' (4.33), in sixth place is 'self-improvement' (4.27), followed by 'creativity' (4.00), 'culture' (3.87), in ninth place is 'art' (3.66), the second-to-last value is 'beauty' (3.49), and the lowest average value of this set belongs to the value 'religion' (2.98).



**Figure 2.** The average self-assessment values of respondents of the fulfilment type of values, which are a set of Apollonian values.

In Figure 3, we present the average values of all two types of Apollonian values according to Musk. The highest average value has the “moral type” of Apollonian values (4.53), followed by the “fulfilment type” of Apollonian values (4.04).



**Figure 3.** Average values of the self-assessment of the respondents of the Apollonian types of values according to Musk.

## 6. Conclusions

Members of Gen-Z grew up in an uncertain and complex environment, which influenced their views on work, study, and the world. They highly emphasize their specific values and individuality. This generation is career-oriented and professionally ambitious, possessing a high level of technical and linguistic knowledge, unafraid of constant changes, always seeking new challenges, wanting to impact the world, with their most important career goals being a balance between professional and private life. In their careers, they expect continuous development, as they fear getting stuck career-wise. They also poorly receive feedback. The knowledge they have is shared virtually, simply, quickly, and publicly. The boundaries between work and entertainment overlap. This generation truly lives for the present (Bencsik, Juhász and Horváth-Csikós, 2016).

Researching topics such as the values of Gen-Z is important, especially because values influence all areas of our functioning. Higher developed values in modern society represent the foundation of an individual's social socialization. In our research, we find that Gen-Z has the most developed moral type of values, especially outstanding are the values of 'understanding with a partner' and 'peace'. However, we expected that fulfilment-type values in Gen-Z would be less expressed, which our research also confirms.

It would make sense to conduct such research annually among different generations. It would be sensible to form individual groups by certain years, gender, or other segments and then compare the results among them. Interesting would also be the presentation of values among different generations, such as Gen-X, Gen-Y, and others.

Thus, we can summarize that all values researchers have in common that they define values as individual behaviour and its contribution to society, sustainability and, last but not least, guide our interests and behaviour.

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# The Importance and Role of Eco-Innovations in the Application of the Circular Economy Model

## Značaj i uloga eko inovacija u primeni modela cirkularne ekonomije

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### Abstract

The model of the circular economy is a fairly new development model of the economy, in which circular or circular models of resource management, product use, and striving towards the concept of creating minimal waste are established. In the circular economy model, it is necessary to reduce waste to the smallest possible extent, and to increase the use of already used resources and products, in such a way that they are included again in the process of production and use. In order to achieve and apply the circular economy model, it is necessary to include several factors and parties, as well as the development of new technologies and innovations. In order to successfully apply the principles of the circular economy, companies should engage in sustainable practices, innovate their business models while simultaneously considering environmental and social aspects and principles. The development and importance of eco-innovations, the development of managerial practices, in many ways accelerates the process of transition and the application of this model. The aim of the paper is to present the way, importance and impact of eco-innovations on the application of the circular economy model and its principles, as well as to contribute to some future research in this area. A special review in the paper refers to the importance and role of three types of ecological innovations: product eco-innovations, process eco-innovations and organizational eco-innovations, which must be developed as a determinant of the application and transition of the circular economy model and the introduction of circular economy principles, which would in many ways facilitated the provision of circular processes and circular products.

*Keywords:* circular economy, eco-innovations, innovations, circular products.

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### Abstrakt

Model cirkularne ekonomije je prilično nov razvojni model ekonomije, u kome se uspostavlja kružni odnosno cirkularni modeli upravljanja resursima, korišćenja proizvoda, kao i težnja ka konceptu stvaranja minimalnog otpada. U modelu cirkularne ekonomije neophodno je svesti otpad na najmanju moguću meru, a povećati upotrebu već korišćenih resursa i proizvoda, na način tako što će ponovo biti uključeni u proces proizvodnje i upotrebe. Radi postizanja i primene modela cirkularne ekonomije neophodno je uključiti više faktora i strana, ali i razvoj novih tehnologija i inovacija. Kako bi uspešno primenile principe cirkularne ekonomije, kompanije bi trebalo da se angažuju u održivim praksama, da inoviraju svoje poslovne modele uz istovremeno razmatranje ekoloških i društvenih aspekata i principa. Razvoj i značaj eko inovacija, razvoj menadžerskih praksi u mnogome ubrzava proces tranzicije i primenu modela cirkularne ekonomije. Cilj rada predstavlja način, značaj kao i uticaj eko inovacija na primenu modela cirkularne ekonomije i njenih principa., kao i tome da doprinese nekim budućim istraživanjima u ovoj oblasti. Poseban osvrt u radu se odnosi na značaj i ulogu tri tipa ekoloških inovacija: eko inovacije proizvoda, procesne eko inovacije i organizacione eko inovacije, koje je neophodno razvijati kao determinantu primene i tranzicije modela cirkularne ekonomije i uvođenja principa cirkularne ekonomije, što bi im u mnogome olakšalo obezbeđivanje kružnih procesa i kružnih proizvoda.

*Ključne reči:* cirkularna ekonomija, eko inovacije, inovacije, kružni proizvodi

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## 1. Uvod

Danas, globalizacija, porast stanovništva, sve veća proizvodnja i još dosta toga, dovelo je do pitanja opstanka Planete. Sve je to posledica linearnog modela ekonomije, koji podrazumeva konstantnu proizvodnju, potrošnju, eksploataciju životne sredine, konstantno korišćenje prirodnih resursa i energije za dobijanje određenih proizvoda, koji se nakon upotrebe odbacuju u okruženje (Milanović *et al*, 2022a). Ozbiljne posledice su nastale razvijanjem i napredovanjem društva, životnog standarda, tehnologija, industrijalizacije (Milanović *et al*, 2022a). Životni standard je odavno postao neodrživ. Neefikasna upotreba resursa u vreme rastuće potražnje dovodi do sve većeg pritiska na životnu sredinu i oskudice resursa koji će uticati na Evropu i druge delove sveta u narednim godinama i decenijama. Cene globalnih proizvoda poput nafte, sirovina i pšenice su rasle poslednjih godina, iako je trenutna finansijska kriza privremeno dovela do smanjenja potražnje za prirodnim resursima (Bleischwitz *et al*, 2009). Ovakav način ophođenja sa resursima, već je doveo do njihove oskudice, a istovremeno i do njihove sve veće potražnje, a na kraju i do degradacije životne sredine i nestabilnosti tržišnih cena. Zahtev za drastičnim smanjenjem opterećenja životne sredine, implicira da adaptacija u okviru postojećih tehnologija nije dovoljna. Umesto toga, potrebne su strategije regulacije koje će uticati na „forsiranje tehnologije” (Rennings, 2000).

Na globalnom nivou, sve je ovo dovelo do potrebe za novim načinom razmišljanja, inovacijama i promenama u svim segmentima života. Kao potencijalno rešenje i odgovor na izazov održivosti javlja se model cirkularne ekonomije, koji predstavlja složen, sveobuhvatan i, pre svega, dugoročan proces i ne predstavlja uopšte lak zadatak (Milanović *et al*, 2022a). Kako bi se postigla potpuna primena principa i ciljeva cirkularne ekonomije, neophodno je obezbeđivanje kvaliteta i raspoloživosti resursa, koje se postiže kroz razne vrste ulaganja u energetske valorizaciju, obnovljive izvore, ali i razvijanje eko-inovacija (Milanović *et al*, 2022). Postizanje efikasnosti resursa i društva sa niskim emisijama ugljenika ključni su izazovi za budućnost privrede Evropske unije (EU), njenog industrijskog i uslužnog sektora i njenih građana. Eko-inovacije – koje stavljaju EU na put ka resursno i energetski efikasnoj ekonomiji i cirkularnoj ekonomiji, mogu se posmatrati kao ključ za jačanje strateške pozicije Evrope na svetskim tržištima u budućem periodu (Bleischwitz *et al*, 2009). U tom smislu, izgradnja i razvoj eko industrije i eko inovacija u zemljama EU, se može posmatrati kao polazna tačka radi postizanja efikasnosti resursa i trenutnog izlaska iz ovakve trenutne situacije (Bleischwitz *et al*, 2009).

Cirkularna ekonomija se pojavljuje kao nova paradigma održivosti, a inovacije i eko-inovacije se prepoznaju kao jedan od najvažnijih mehanizama koji omogućavaju prelazak sa linearne na cirkularnu ekonomiju u proizvodnim procesima, jer postoji jaka veza između eko-inovacija i aktivnosti cirkularne privrede (Maldonado-Guzmán *et al*, 2021). Cirkularna ekonomija predstavlja ekonomski sistem koji podrazumeva promenu u načinu povezanosti ljudskog društva sa prirodom, a ima za cilj zatvaranje energetskih i materijalnih petlji, sprečavanje iscrpljivanja resursa, i omogućavanje održivog razvoja kroz njegovu implementaciju na mikro, mezo i makro nivoima. Postizanje ovog kružnog modela zahteva ciklične i regenerativne ekološke inovacije u načinu na koji društvo reguliše, proizvodi i troši (Prieto-Sandoval *et al*, 2018).

Cirkularna ekonomija promovise sistemске inovacije koje imaju za cilj dizajniranje otpada, povećanje efikasnosti resursa i postizanje bolje ravnoteže između privrede, životne sredine i društva (Milanović *et al*, 2022a), tako da u ovim turbulentnim vremenima ogromne konkurencije, radikalne promene poput organizacione transformacije i reinženjeringa postaju neminovnost, i mnogi pomenuti modeli su neupotrebljivi bez modifikacija (Erić & Dabetić, 2018). Aspekti inovacija igraju ne samo glavnu ulogu u nacionalnim i međunarodnim ekonomskim politikama, već predstavljaju važan element strategija održivog razvoja (Rennings, 2000). Danas su inovacije i održivost pitanja kojima organizacije treba da se bave kada sastavljaju svoje strategije, pogotovo u kontekstu primene modela cirkularne ekonomije. Usklađivanje i razvoj inovacija i eko inovacija sa ciljevima modela cirkularne ekonomije je neophodno što pre započeti, kako bi model cirkularne ekonomije i njeni principi mogli biti primenjeni i uticali na održivost.

Ovaj rad ima za cilj da predstavi način i značaj uticaja i razvoja inovacija i eko inovacija na primenu modela cirkularne ekonomije i njenih principa. Takođe, rad predstavlja prikaz i razvijanje menadžerskih praksi koje promovišu stvaranje i implementaciju eko-inovacija za tranziciju modela cirkularne ekonomije. Međuzavisnost između eko-inovacije i cirkularne ekonomije i dalje je slabo istražena oblast (Maldonado-Guzmán *et al*, 2021), tako da bi ovaj rad mogao biti inspiracija kako za dalja istraživanja, tako i tome da doprinese budućim istraživanjima u ovoj oblasti.

Struktura rada je sledeća: Nakon Uvoda koje predstavlja poglavlje jedan, poglavlje dva se odnosi na pojam i značaj inovacija. Poglavlje tri se odnosi na predstavljanje eko inovacija kao determinante primene modela cirkularne ekonomije, kao i na ulogu i značaj ekoloških inovacija proizvoda, procesa i organizacije u implementaciji ekonomije zatvorene petlje. Poslednje poglavlje, odnosno poglavlje četiri se odnosi na zaključna razmatranja i određene komentare i preporuke. Na kraju je dat pregled korišćene literature i referenci.

## 2. Pojam i značaj inovacija

Kao što je navedeno u prethodnom poglavlju, savremene organizacije zbog globalizacije i značajnih tehnoloških poboljšanja, suočene su sa potrebom za razvijanjem novih poslovnih modela, kako bi ostale konkurentne, ali istovremeno kako bi i smanjile štetan uticaj na životnu sredinu i povezale se sa ciljevima održivosti. Jedan od načina prelaska na model cirkularne ekonomije, kao i opstanka, rasta i daljeg razvoja ovih organizacija, zavisi od njihove inovativne sposobnosti (Erić & Lekić, 2017). Ono što je bitno napomenuti da više, nije dovoljno uskladiti razvoj inovacija samo sa organizacionim ciljevima preduzeća, već je potrebno i raditi na tome da se informišu zainteresovane strane preduzeća o njegovoj

povezanosti sa održivošću (Kovács & Lippai-Makra, 2018), kao i principima modela cirkularne ekonomije i njihove primene, kako bi se stekao uvid o samoj suštini poslovanja preduzeća, a i o ekološkoj svesti zaposlenih.

Oblici ispoljavanja inovacija su različiti, pa prema tome postoje: upravljačke, tehnološke, organizacione, radikalne, marketinške, inkrementalne i druge, ali oduvek su inovacije bile sastavni deo ljudskog postojanja (Erić & Dabetić, 2018). Skup definicija samog pojma inovacija je širok i reprezentativan u smislu da uključuje skup definicija iz različitih disciplinskih literatura o ekonomiji, inovacijama i preduzetništvu, biznisu i menadžmentu, tehnologiji, nauci i inženjerstvu kao i zaštiti životne sredine i održivom razvoju. U nastavku je dat pregled par definicija inovacija.

Prema autorima Šumpater i Bekhaus (1934) inovacija predstavlja praktičnu implementaciju ideja koje rezultiraju uvođenjem novih dobara ili usluga ili poboljšanjem ponude dobara ili usluga (Schumpeter & Backhaus, 1934).

Prema autorima Barageh i saradnici: „Inovacija je višestepeni proces u kome organizacije transformišu ideje u nove - poboljšane proizvode, usluge ili procese, kako bi napredovale, konkurisale i uspešno se razlikovale na svom tržištu” (Baregheh *et al*, 2009).

Inovacija se često odvija i nastaje kroz razvoj efikasnijih proizvoda, procesa, usluga, tehnologija, umetničkih dela (Lijster, 2018) ili poslovnih modela koje inovatori stavljaju na raspolaganje tržištima, vladama i društvu. Inovacija je često povezana sa pojmom pronalazak, ali nije isto što i pronalazak (Bhasin, 2012).

Autor Damanpur daje jednu od najsveobuhvatnijih definicija inovacija u organizacionom smislu „Inovacije su zamišljene kao sredstvo za promenu organizacije, bilo kao odgovor na promene u spoljnom okruženju ili kao pripremna akcija za uticaj na okruženje. Usled toga, inovacije su široko definisane tako da obuhvataju niz tipova uključujući nove proizvode ili usluge, nove tehnologije, nove oblike strukturiranja organizacije ili nove planove i programe, koji se odnose na organizaciju” (Damanpour, 1996).

Inovacija usluga se može definisati kao: „stvaranje vrednosti za kupce, zaposlene, vlasnike preduzeća, partnere i zajednice kroz nove ili poboljšane ponude usluga, uslužne procese i poslovne modele usluga” (Tseng *et al*, 2018; Erić & Dabetić, 2019).

Što se tiče ekoloških inovacija, one predstavljaju jedne od aktuelnijih tipova inovacija, pogotovo poslednjih godina, pa je upravljanje ovim inovacijama sve važnije pitanje za mnoge firme, koje troše i izdvajaju ozbiljne budžete na njihov razvoj (Rennings, 2000). Ulaganje u eko inovacije podrazumeva dve vrste investicija: Investicije u inovativna rešenja, koja se odnose za smanjenje uticaja kompanija na životnu sredinu i ulaganja u istraživanje i razvoj životne sredine (unutrašnja spoljna) za ekološke inovacije (Milanović *et al*, 2022).

Kako bi uspostavile svoje kružne modele poslovanja i primenile principe cirkularne ekonomije prilagođavanje ekološki poželjnih procesa ili proizvoda je već deo svakodnevnih aktivnosti velikog broja firmi. Kao što su autori Klef i Renings (1999) prikazali u istraživanju nemačke industrije, oko 80% svih inovativnih firmi je uključeno u ekološke inovativne projekte. Ovi projekti se odnose na primer na zamenu opasnih supstanci, dizajniranjem i korišćenjem ekološki efikasnih proizvoda, uštedom energije, otpada i materijala ili smanjenjem emisija (Cleff & Rennings, 1999).

### **3. Eko inovacija kao determinanta primene modela cirkularne ekonomije**

Postoji takođe, veliki broj definicija i eko inovacija. Jednu od sveobuhvatnijih su dali autori Albino i saradnici (2009), koja podrazumeva da se eko-inovacija proizvoda odnosi na nove ili značajno poboljšane proizvode ili usluge, čijom se primenom minimizira upotreba neobnovljivih resursa, izbegava upotreba toksičnih materijala i smanjenja upotrebe obnovljivih resursa, a sve iz razloga da ne bi došlo do prelaska limita kapaciteta Planete koji je potreban za njihovo obnavljanje (Albino *et al*, 2009). Da bi ekološke inovacije bile alat za implementaciju koncepta cirkularne ekonomije, one moraju biti dizajnirane, na taj način da se mogu u potpunosti ponovo i na nov način koristiti kroz popravku, održavanje, ponovnu proizvodnju, reciklažu i drugo. Samo takvi proizvodi, postaju tzv. „kružni proizvodi” i samo takvi obezbeđuju vrednost (Franzò *et al*, 2021; Pichlak, & Szromek, 2022).

Eko inovacije kao osnovne determinante u okviru primene modela cirkularne ekonomije, podrazumevaju uključivanje i razvijanje menadžerskih praksi i obuhvataju tri tipa ekoloških inovacija, a to su: eko inovacije proizvoda, procesne eko inovacije i organizacione eko inovacije (Pichlak & Szromek, 2022).

Eko inovacije proizvoda, obuhvataju sledeće prakse: eko dizajn proizvoda, optimizaciju proizvoda za efikasnost resursa, određivanje proizvoda, proširenu odgovornost proizvođača i eko označavanje proizvoda.

Procesne inovacije obuhvataju ostvarivanje praksi kroz dve vrste eko efikasnosti: energetske i materijalnu, kako bi se postigli kružni procesi.

Organizacione eko inovacije se svode na prakse koje obuhvataju primenu standarda sistema upravljanja zaštitom životne sredine (ISO 14001 i EMAS), kao i zeleno upravljanje lancem snabdevanja.

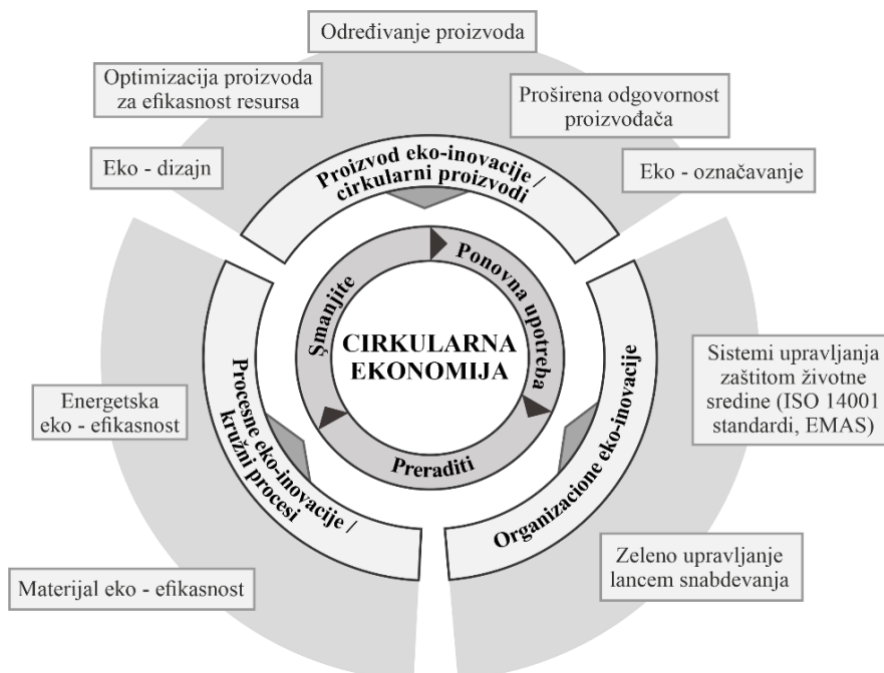
U Tabeli 1. su prikazana tri tipa eko inovacija koje se mogu primeniti na model cirkularne ekonomije, kao i njihove prakse, koje su karakteristične za svaku od njih pojedinačno. Kao što se može videti iz Tabele 1, Proizvodne eko inovacije sadrže najveći broj elemenata, odnosno menadžerskih praksi koji se mogu primeniti na sam proizvod, kako bi se dostigao tzv. cirkularni proizvod. Od navedenih, svaki ima određenu i važnu ulogu za sebe, pa tako na primer eko dizajn proizvoda, prema mnogim autorima koji se bave ovom oblašću „igra ključnu ulogu u pretvaranju ideje o ekonomiji zatvorenog kruga u stvarnost” (Vence & Pereira, 2019). Svaki od navedenih elemenata eko inovacija može biti ideja i tema za sebe, koja se u nekim budućim istraživanjima može razraditi.

**Tabela 1.** Eko inovacije primenjene na cirkularnu ekonomiju

Eko inovacije kao determinanta primene modela cirkularne ekonomije	Proizvodne eko inovacije	Eko dizajn proizvoda
		Optimizacija proizvoda za efikasnost resursa
		Određivanje proizvoda
		Proširena odgovornost proizvođača
		Eko označavanje proizvoda
	Procesne eko inovacije	Energetska eko efikasnosti
		Materijalna eko efikasnost
	Organizacione eko inovacije	Standardi sistema upravljanja zaštitom životne sredine (ISO 14001 i EMAS)
		Zeleno upravljanje lancem snabdevanja

**Izvor:** Publikacija autora

Uloga i značaj ekoloških inovacija proizvoda, procesa i organizacije u implementaciji ekonomije zatvorene petlje, kroz obavljanje menadžerskih praksi predstavlja složen i konceptualni model prikazan na Slici 1.



**Slika 1:** Menadžerske prakse koje promovišu stvaranje i implementaciju eko-inovacija za tranziciju cirkularne ekonomije

**Izvor:** (Pichlak & Szromek, 2022).

Treba napomenuti da, zbog složenosti ekoloških problema, kružno orijentisane inovacije i njihov razvoj predstavlja mnogo veći izazov od drugih vrsta inovacija (Hall & Vredenburg, 2003). Model cirkularne ekonomije uz pomoć razvijenih eko inovacija, podrazumeva njihovo kružno obnavljanje i korišćenje otpada bez ograničenja kao resursa u reciklaži, što istovremeno i čini suštinu principa modela cirkularne ekonomije.

Na Slici 1 se može uvideti konceptualni prikaz svih navedenih elemenata tri tpa eko inovacija, koje pojedinačno, ali i međusobno deluju na primenu samog modela cirkularne ekonomije i njenih principa. Ovim prikazom se jasno može uvideti značaj i uloga koju razvijanje eko inovacija ima na primenu modela cirkularne ekonomije. Definisanjem i postavljanjem jasnih procesa i struktura u oblasti upravljanja kreativnošću i eko inovacija, može uticati i utiče na podršku i prelazak sa linearne ekonomije na cirkularnu ekonomije, sa posebnim fokusom na ulogu međuorganizacijske saradnje (Mignacca *et al.*, 2023).

#### 4. Zaključna razmatranja

Cilj ove studije je da ukaže na ogroman budući značaj inovacija i eko inovacija i njihove primene kako bi se ispunili principi i ciljevi cirkularne ekonomije, ali i tranzicija primene kružnog modela. Ulaganje u razvoj inovacija i eko inovacija ima višestruke koristi, kao što su: ostvarivanje konkurentne prednosti nacionalnih ekonomija, porast nacionalnog bogatstva, obezbeđivanje bolje trgovine resursima i proizvodima, otvaranja novih tržišta, ali i obezbeđivanje prelaska sa linearnog na cirkularni model ekonomije.

Eko inovacije predstavljaju jednu od osnovnih dimenzija prelaska sa linearnog na cirkularni model ekonomije, a razvoj i ulaganje u ove vrste inovacija, pogotovo u procesima, proizvodima i organizacijama su više nego neophodne. Autori Erić i Dabetić (2018) su u svom radu i naveli kako organizacije trebaju umeti prepoznati tehnološke promene, da rade na njihovim usvajanjima i da ih sprovode putem inovacija (Erić, & Dabetić, 2018).

U radu su prikazane i menadžerske prakse koje promovisu stvaranje i implementaciju eko-inovacija za tranziciju cirkularne ekonomije, pa se upravo značaj ovog rada ogleda u pojedinačnom i međusobnom uticaju na model cirkularne ekonomije, svih navedenih elementa. Kompanije koje koriste istraživačke kapacitete u kontekstu eko inovacija, postižu veći uspeh jer pružaju veću fleksibilnost od kompanija koje se ne angažuju po ovom pitanju. Razvoj ekoloških inovacije predstavlja priliku za regione u razvoju kako bi pristupili „zelenim ekonomijama” kao i cirkularnim modelima, ali i mnogo više. Regioni u razvoju mogu razvojem eko inovacija obezbediti i priliku da razviju nova vodeća tržišta (O'Brien *et al.*, 2012).

Zaključuje se da razvoj i ulaganje u eko inovacije može predstavljati jedan od osnovnih inputa za stvaranje vrednosti u cirkularnom ekonomskom modelu. Čistija proizvodnja, kontrola zagađenja, upravljanje otpadom, obrnuta logistika i drugo su glavne promene uočene u prelasku na kružne poslovne modele. Neophodno je takođe definisati koje resurse i menadžerske prakse treba primeniti radi razvijanja i ulaganje u kružna inovativna rešenja kako bi se postiglo zatvaranje petlje i veća konkurentnost, a kako bi se istovremeno, eko inovacije primenile u konkretnom pravcu sprovođenja i primene cirkularne ekonomije.

Svakako, tema rada i uopšte eko inovacija je jako opširna, a pogotovo međusobni uticaj eko inovacija i modela cirkularne ekonomije. Značaj ove teme može predstavljati buduće smernice za dalja istraživanja u ovoj oblasti i njihovoj primeni.

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# Choosing a framework for web API application development

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## Abstract

Web API applications are an essential part of modern web development, enabling interaction between various systems and platforms. This paper provides a recommendation for choosing a framework for web API application development, taking into account factors such as network traffic, performance, security, hosting cost, and the simplicity of implementation. Two popular frameworks, Laravel and ASP.NET Core are discussed in this paper. The first section of the paper provides an overview of web APIs and their importance in modern web application development. Web APIs serve as the foundation of today's interconnected digital world, facilitating data exchange and functionality integration across different platforms. The second section focuses on Laravel, a PHP framework commonly hosted on affordable shared hosting packages, which can be advantageous for smaller projects due to lower costs. Additionally, the second section includes a practical example of implementing a web API using the Laravel framework. The third section explores ASP.NET Core, known for its high execution speed and efficiency, but often requiring cloud hosting, which can significantly increase the cost. The paper offers a practical illustration of web API implementation using the ASP.NET Core framework. The paper demonstrates that choosing an appropriate framework includes factors such as performance, functionality, hosting cost, a good understanding of the relevant technology, as well as a specific project requirements and available resources.

*Keywords:* Web API, Laravel, ASP.NET Core, hosting

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## 1. Introduction

Web Application Programming Interface or Web API represents a set of defined methods and communication rules that enable interaction between different software applications over the Internet. APIs allow applications to communicate and exchange data and functionality regardless of their physical location or the platform they operate on. Web APIs enable the separation of front-end and back-end by providing a way for the front-end and back-end to communicate regardless of the technologies used on both sides (Pattankar & Hurbuns, 2017). Web APIs allow applications to access and manipulate resources on the server. Applications often rely on functionalities provided by other services or applications. Web APIs provide access to these services through a standardized interface. Web APIs use HTTP/HTTPS protocols to enable standardized communication between the client and the server. Clients send requests to retrieve data or perform actions, and servers respond with corresponding data or status codes. Requests are typically sent using HTTP methods such as GET, POST, PUT, and DELETE. The server responds to the client's request through an HTTP response. The response includes a status code indicating the outcome of the request (e.g., 200 OK for a successful request, 404 Not Found if the resource is not found, 500 Internal Server Error if an error occurs on the server). The response may also contain data in formats such as HTML, JSON, XML, or others, depending on the agreement between the client and the server. Currently, there is no absolute "most popular" or "most used" web API framework or technology because the choice depends on various factors such as project specifics, programmer preferences, and organizational needs. However, several technologies and frameworks are particularly popular and widely used in the industry.

Laravel is a popular PHP framework that provides excellent support for building RESTful APIs (Stauffer, 2023) due to the use of the PHP programming language, which is the most widely used language for web applications development. Express.js is a web application framework specifically designed for building web applications and APIs in Node.js. For JavaScript developers, Express.js is often the preferred framework for the rapid development of web APIs. ASP.NET Core is a popular framework for developing web APIs in the Microsoft ecosystem (De Sanctis, 2023). Django Rest Framework is a popular framework for developing RESTful APIs using the Python programming language.

This paper provides a comparative overview of the characteristics of Laravel Web API and ASP.NET Core Web API, along with recommendations for choosing a framework for the development of web API applications. Additionally, the implementation of the same web API is presented using both technologies.

## 2. Laravel Framework for Web API Application Development

Laravel is a popular open-source PHP web framework that provides a set of tools and functionalities for web application development. Laravel is known for its clear and readable syntax, making code development and maintenance straightforward. It offers a powerful routing system, facilitating the redirection of users to specific parts of your application. Laravel supports the Model-View-Controller architecture, aiding in code organization and the separation of logic, data, and the user interface (Chen et al., 2017). Laravel includes Eloquent, an Object-Relational Mapping (ORM) that allows easy access and manipulation of databases through PHP objects. Laravel relies on Composer, a popular PHP package management tool. Additionally, it comes with many pre-integrated packages and components that facilitate working with various functionalities. Laravel includes Artisan, a CLI interface that allows the execution of various tasks such as creating models, migrations, controllers, and other elements. Laravel is an excellent choice for developing Web APIs. With its rich functionality, clear syntax, and support for modern architecture, Laravel provides everything needed to build robust and scalable Web APIs.

Package managers are tools that automate the process of installing, updating, configuring, and managing software libraries or packages within a programming environment. Different development environments utilize different package managers such as npm (Node Package Manager) for JavaScript or NuGet for .NET. To create a Laravel application, you specifically need to install Composer. On a Windows machine, Composer can be installed using an installation file (available for download at <https://getcomposer.org/>). Using Composer, we install the Laravel application installer and use it to create a Laravel application. Now we create a Laravel application using: `laravel new lapi` (where 'lapi' is the application name). Inside the Laravel application, we have the Artisan CLI interface at our disposal, making it straightforward to create components for the web API, including models and controllers.

Now, let's provide the steps for implementing a simple web API using the Laravel framework. As a database server for the Laravel API, we will use the native server for PHP applications, MySQL. On the MySQL server, we will create a database that provides data for the web API. The database consists of only two tables: a table named 'Kategorije' for product categories and a table named 'Proizvodi' for products. For simplicity, each category contains multiple products, and each product is associated with a specific category. We will create the same database later on SQL Server when discussing ASP.NET Core web API. As a development environment for creating Laravel Web API, we will use VS Code. Figure 1 displays Visual Studio Code as the development environment where the ASP.NET Core Web API application is created.

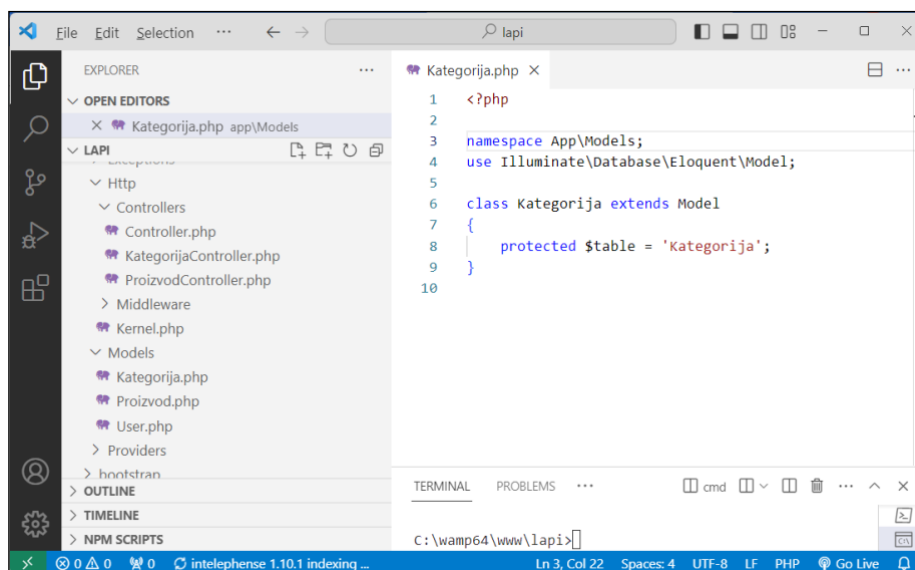
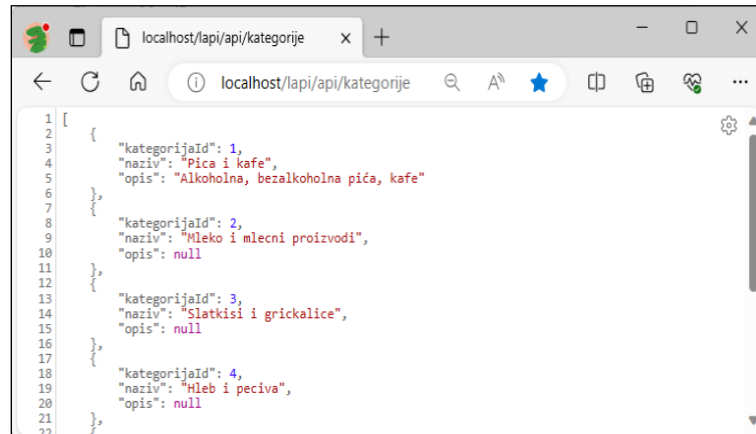


Figure 1. Laravel Web API application in development environment

Configuration of the connection to the database is done in the Config folder of the Laravel application. Creating a model class and its corresponding controller in Laravel is extremely simple (Stauffer, 2023), in terminal we type the command: `php artisan make:controller KategorijaController --model=Kategorija`. As shown in Figure 1, the only code that needs to be written inside the model class is to specify the database table to which the model class is mapped. In Laravel, each model class is derived from the base Model class provided by Laravel's Eloquent ORM (Object-Relational Mapping).

The index action of the `KategorijaController` will contain just one line of code: `return Kategorija::all();` Calling the `all()` method for the `Kategorija` model will return all rows from the table corresponding to the `Kategorija` model. It is necessary to further define routes that map to controllers and their methods in parts of URL addresses. Each route specifies a particular URL path and associates it with the corresponding controller and methods that will be called when a request arrives at that

route. In Laravel, defining routes is done in the `api.php` file located in the `routes` folder. After defining the route at the address `http://localhost/lapi/api/kategorije`, we retrieve the data as shown in Figure 2.



The screenshot shows a web browser window with the address bar displaying `localhost/lapi/api/kategorije`. The main content area shows a JSON array of four objects, each representing a category. The data is as follows:

```
1 [
2   {
3     "kategorijaId": 1,
4     "naziv": "Pica i kafe",
5     "opis": "Alkoholna, bezalkoholna pića, kafe"
6   },
7   {
8     "kategorijaId": 2,
9     "naziv": "Mleko i mlečni proizvodi",
10    "opis": null
11  },
12  {
13    "kategorijaId": 3,
14    "naziv": "Slatkisi i grickalice",
15    "opis": null
16  },
17  {
18    "kategorijaId": 4,
19    "naziv": "Hleb i peciva",
20    "opis": null
21  },
22 ]
```

**Figure 2.** Data from Laravel web api

In the exact same manner, we create the model class `Proizvod` and its corresponding controller `ProizvodController`. The Laravel API created in this way is deployed to shared hosting and is accessible online at the address `https://api.garitonovic.com/`.

### 3. ASP.NET Core for Web API Application Development

ASP.NET Core Web API is a framework for building RESTful web services using the ASP.NET Core platform. It enables the development of APIs (Application Programming Interfaces) for communication with other applications, mobile apps, frontend applications, or other services (Kronis & Uhanova, 2018). ASP.NET Web API is open source and supports various platforms, including Windows, Linux, and macOS. ASP.NET Core Web API uses the Model-View-Controller (MVC) architecture. In the context of Web API, models represent the data transmitted through the API. The controller is used to handle HTTP requests and return appropriate responses. In traditional MVC applications, the View represents the user interface (HTML pages). However, in the context of Web API, there are no classic views in terms of generating HTML. Controllers in ASP.NET Core Web API are inherited from the `ControllerBase` base class. ASP.NET Core Web API supports Dependency Injection for injecting dependencies into controllers, which improves code testing and maintenance. ASP.NET Core enables automatic mapping of HTTP requests to action parameters (model binding), making it easier to handle data sent with requests. ASP.NET Core Web API represents a powerful tool for developing fast and efficient web services. This framework is optimized for high performance and enables the development of scalable APIs. However, to fully leverage the benefits of this tool, cloud hosting solutions are frequently utilized. Using cloud services can significantly increase operational costs, especially when advanced functionalities or large amounts of resources are utilized. ASP.NET Core Web API is an excellent choice for developing efficient web services, but proper management of hosting options and costs in a cloud environment is crucial for project success. ASP.NET Core Web API uses the NuGet package manager to download various libraries for .NET.

To create an ASP.NET Core Web API, it is necessary to install the .NET SDK. After that, we have access to the .NET CLI (Command-Line Interface) for creating the web API. After creating the application folder, we create the web API application using the command: `dotnet new webapi`. We will store the data for the web API on a SQL server, and on it, we will create an identical database as we did in the example for the Laravel web API on the MySQL server. Since it is common to use the Entity Framework technology for database access in ASP.NET Core Web API, we will install the appropriate package: `dotnet add package Microsoft.EntityFrameworkCore.SqlServer`. It is necessary to define the connection string for the database in the `appsettings.json` file.

Figure 3 displays Visual Studio Code as the development environment where the ASP.NET Core Web API application is created.



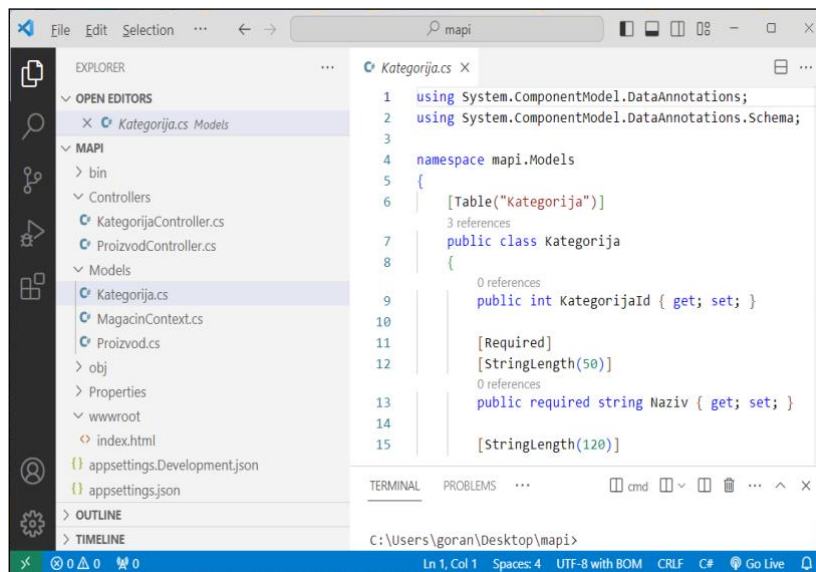


Figure 3. ASP.NET Core Web API development environment

The model class *Kategorija* was created using the command: *dotnet new class -n Kategorija -o ./Models*, and then the columns of the *Kategorija* table were manually mapped to properties of the corresponding class. It is necessary to create a *DbContext* class used for communication with the database, and then register the context class as a service in the application. The controller is created using the command: *dotnet new class -n CategoryController -o ./Controllers*. The class representing the Web API controller should inherit from the base class **ControllerBase** and be annotated with **[ApiController]**. In the controller's constructor, it is necessary to inject an object of the *DbContext* class, after which controller methods can be written. In the same manner, we create the model class *Proizvod* and its corresponding controller *ProizvodController* with route */api/proizvodi*. After defining the route at <http://localhost:5000/api/proizvodi>, we retrieve data from the ASP.NET Core Web API.

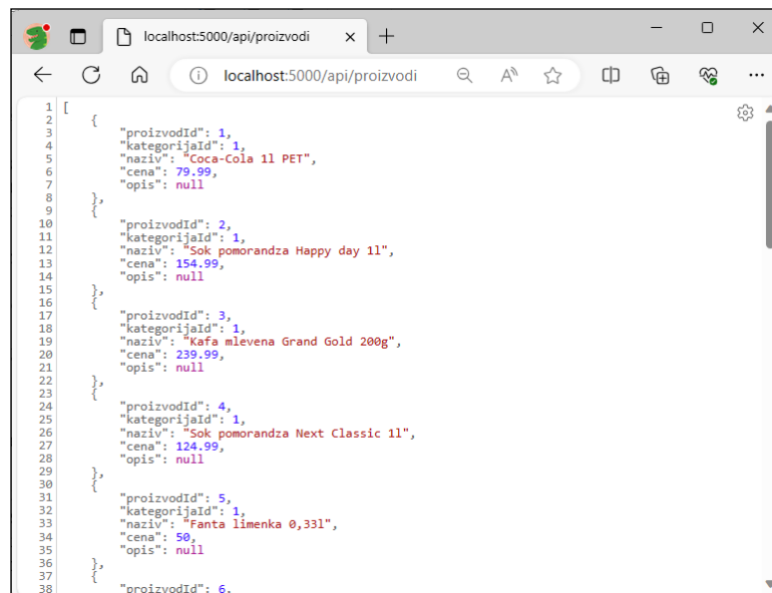


Figure 4. Data from ASP.NET core web api

#### 4. Conclusions

Based on the aforementioned, we will summarize the characteristics of both considered frameworks and provide guidelines for choosing a framework when creating a web API application. ASP.NET Core Web API is based on C# and runs on the .NET Core platform, while Laravel is based on PHP. C# code is compiled into executable code before execution, which can lead to better performance compared to PHP, which uses an interpreter. Performance also depends on the approach to the database. A quality ORM can impact performance, and both frameworks have good ORMs: Laravel has Eloquent, while ASP.NET Core has Entity Framework.

Hosting costs for Laravel Web API and ASP.NET Core Web API can vary significantly depending on various factors, including the choice of hosting provider, the type of hosting, resource requirements of the application, and project specifics. Hosting costs include the price of the database. Laravel supports various databases but most commonly uses MySQL, while the natural choice for ASP.NET Core Web API is MS SQL Server, which is considerably more expensive than MySQL. Although both frameworks, Laravel and ASP.NET Core, enable fast development of web API applications, the general impression is that Laravel requires fewer configurations and a smaller number of lines of code to achieve the same functionality. The comparative overview of features for Laravel and ASP.NET Core web APIs is presented in Table 1.

**Table 1.** Comparative overview of features

Characteristic	ASP.NET Core Web API	Laravel Web API
Language	C#	PHP
Framework	ASP.NET Core	Laravel
CLI Interface	dotnet CLI	Artisan CLI
Development Philosophy	Open Source, Cross-platform, Multi-platform development	Open Source, Developer-Friendly, PHP ecosystem
Architecture	MVC (Model-View-Controller)	MVC (Model-View-Controller)
RESTful Routing	Yes	Yes
ORM	Entity Framework Core	Eloquent
Packages and Dependencies	NuGet (C#-specific)	Composer (PHP-specific)
Code Generation	Scaffold classes, models, etc.	Scaffold classes, controllers, models, etc.
Required configurations and number of lines of code	Less	More
Database	Various supported databases (SQL Server, MySQL)	Various supported databases (MySQL, PostgreSQL)
Hosting Options	Various options (Azure is commonly used)	Various options (Shared hosting, VPS, etc.)
Performance	Good performance, optimized for speed	Good performance, depends on hosting and optimizations

When choosing a framework for building a web API, it is important to consider the features listed in Table 1. In addition to the significant experience of the development team in the respective technology, factors such as expected network traffic and available resources should also be taken into account.

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# Impact of service quality, trust, perceived value, customer expectations on customer loyalty in Albanian tourism industry. Case study on 3- and 4-stars hotels in Durres, Albania.

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## Abstract

In modern society tourism industry is developing very fast by becoming a global industry. This study aims to identify the impact of service quality on trust, perceived value, and customer expectations in tourism industry and its significant implications for customer loyalty in tourism industry. The main objective is to explore the relationships among these key factors and their collective influence on customer loyalty. This study is focused on the Albanian tourism industry, especially in 3- and 4-stars hotels that operate in the city of Durres. Statistical tests included descriptive statistics, internal consistency, reliability, validity, correlation and regression were conducted to determine the relationship and to validate the study. The survey for this study has been applied to 400 tourist that has been accommodated in different hotels of 3 and 4 stars in Durres, from May to September 2023. The study found that there is a positive relationship between service quality and trust, service quality and perceived value, service quality and customer expectation. All those variables are considered predecessors of customer loyalty. By examining these interrelationships, this research contributes valuable insights to the tourism industry, helping hotel in Durres to understand the dynamics that drive customer loyalty in the development of long-term loyalty to contribute to the sustainability and success of their businesses in this competitive industry.

*Keywords:* customer loyalty, service quality, trust, perceived value, customer expectation.

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## 1. Introduction

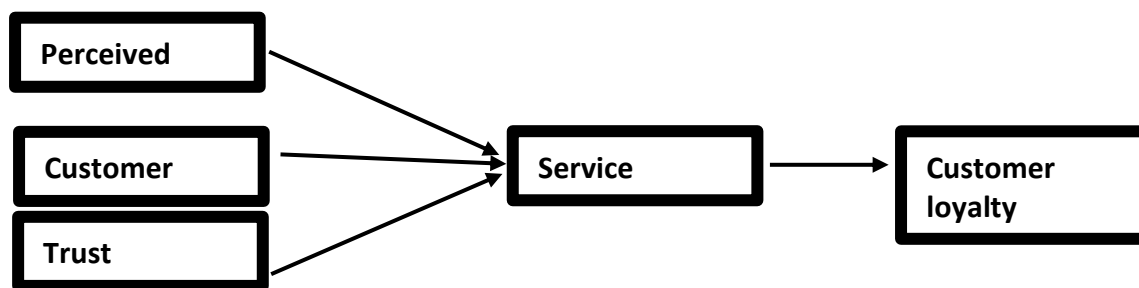
Over the time, managers understood the importance of customer loyalty and begun to be focused on customer relationship strategies to keep customer loyal to their services, brands, or products. Especially in tourism industry that the competition is hard loyalty and loyalty programs are an added value that help businesses in this industry to take competitive advantages through others. The concept of loyalty became one of the most investigated concepts both in academic research and in business studies. It is important to study and to predict factors that affect customers to become loyal. Nowadays companies have understood that is easier and more profitable to maintain long term customers than attract new ones. The aim of this study is to identify the impact of service quality through trust, perceived value, and customer expectations on customer loyalty.

Loyalty dimensions can be divided in different categories. The first category is related with perceptual factor such as satisfaction and trust. On the other hand, behavioural factors are related with quality services determined by two dimensions such as perceived value and customer expectations. (Singh, 2011). Those concept and dimensions will be used during this research to explain the importance of customer loyalty on business that operates in Albanian tourism industry and how loyalty helps in the creation of competitive advantages. In tourism sector the interaction between customer and sellers is immediate and constant. This is the reason that customer loyalty is a key factor on tourism and service sector in general. Also, the level and interaction of feedback is higher for services than for products and customer loyalty can act like a barrier for changing the supplier. (Constantinescu, 2007).

The first determinant, in tourism sector, that is directly and positively related to loyalty is service quality. A high level of service quality fosters positive perceptions and experiences, leading to increased trust in the service provider. Trust plays an important role in determining loyalty, because customers are more likely to exhibit loyalty to businesses they perceive as reliable and trustworthy. Another important determinant that will be explained and measured during this study is perceived value. Customers have the tendency to weight the benefits that they received from product and services against the costs incurred, a perception of value towards loyalty and satisfaction. On the other hand, customer expectations act as a benchmark for the measurement of service quality. Meeting or exceeding these expectations contributes to customer satisfaction and influences their perception of value. Conversely, unmet expectations may lead to dissatisfaction and reduced trust.

This study explores how aligning service quality toward its determinants trust, perceive value and customer expectations contributes to positive outcomes in terms of customer loyalty. Statistical tests included descriptive statistics, internal consistency, reliability, validity, correlations and regressions were conducted to determine the relationship and to validate the study. The survey for this study has been applied to 550 tourist that has been accommodated in different hotels of 3 and 4 stars in Durres, from May to September 2023. The study found that there is a positive relationship between service quality and trust, service quality and perceived value, service quality and customer expectation. All those variables are considered predecessors of customer loyalty. By examining these interrelationships, this research contributes valuable insights to the tourism industry, helping hotel in Durres to understand the dynamics that drive customer loyalty in the development of long-term loyalty to contribute to the sustainability and success of their businesses in this competitive industry.

#### Conceptual model of the reserch:

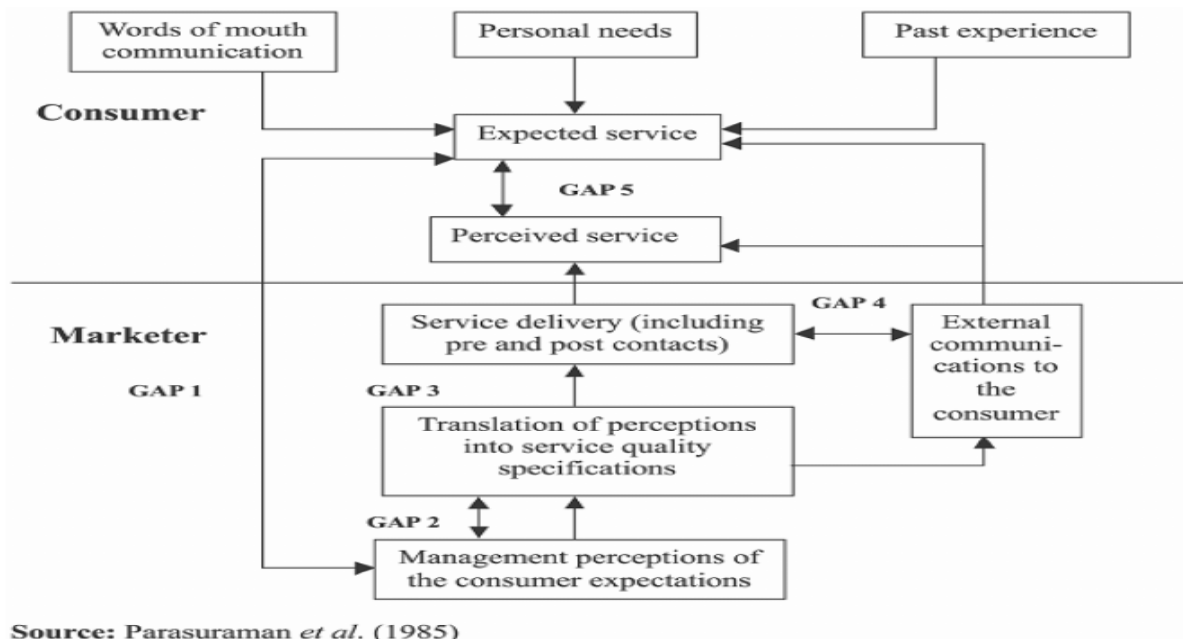


## 2. Body of Manuscript

This literature review highlights the interconnectedness of service quality, trust, perceived value, and customer expectations in shaping customer loyalty in the Albanian tourism industry, with a specific focus on 3- and 4-star hotels in Durres. As the hospitality sector in Albania continues to evolve, empirical investigations into these factors will provide valuable insights for hotel managers, policymakers, and researchers aiming to enhance customer loyalty and sustain the growth of the tourism industry in the region. Marketing literature identifies different loyalty determinants, explaining and investigating them from a theoretical and practical point of view. Loyalty dimensions can be divided in different categories. The first category is related with perceptual factor such as satisfaction and trust. On the other hand, behavioural factors are related with quality services determined by two dimensions such as perceived value and customer expectations. All those dimensions of loyalty will be explained and interpreted in the Albanian tourism context.

### 2.1. Service quality model /SEVQUAL

The Service Quality Model or the SERVQUAL Service Quality Model is a model developed and implemented by marketing gurus Valarie Zeithaml, A. Parasuraman and Leonard Berry in 1988. It is a model that help to measure service quality related with customer perception and expectation toward the service that they ask for. (Parasuraman, Zeithaml and Berry, 1988). This model is an important tool that helps to measure service quality, because it was realized that improving the quality of service can give organizations a competitive advantage through the others. This model is a qualitative analyses model in which the quality of the service is measured by general environmental factors. (Parasuraman, Zeithaml and Berry, 1988). The success of this model is that it can be applied in different cultural context. In this research I am going to use this model in the Albanian tourism context, to be precises in the hotels that operate in the city of Durres. (Parasuraman, Zeithaml and Berry, 1988).



Source: Parasuraman et al. (1985)

**Source: Parasuraman, Zeithaml and Berry, 1988**

The aim of this model is to study the gap between what was expected and was perceived from the service that the customer has taken. According to Parasuraman, Zeithaml and Berry, 1988, gap 1 explains the difference between customer expectations and management's perceptions of these expectations; gap 2 explains the difference between management's perceptions of consumer expectations and service quality specifications; Gap3 represents the difference between the quality of service specifications and the service actually provided; Gap 4 explains the difference between service delivery and communication with customers about delivery; Gap 5 explains the difference between customer expectations and perceived service. The significance of Gap 5 depends on both the extent and direction of the first four gaps. (Parasuraman, Zeithaml and Berry, 1988). The questionnaire that will be developed during this research has been compiled by considering all service quality dimensions and gaps.



**Source: Parasuraman, Zeithaml and Berry, 1988**

**H1:** There is a positive relationship between customer loyalty service quality.

**H0:** There is not a positive relationship between customer loyalty service quality.

**2.2. Trust**

Trust is a fundamental component of any successful customer-business relationship. In the hospitality industry, trust is built through consistent, reliable, and transparent interactions between the customer and the service provider. High levels of trust can lead to increased customer loyalty (Morgan & Hunt, 1994). In the Albanian tourism industry, exploring the role of trust in the context of 3- and 4-star hotels in Dures will provide valuable insights into the dynamics of customer loyalty. Sellers of different products and services are the ones that build the relationship with customers. Trust means faith and believes. (Young and Albaum, 2003). In terms of business relationship trust is explained as a simultaneous relationship between buyers and sellers in which the seller promises that will fulfil customer needs and obligations. (Schurr and Ozanne 1985). Trust is described as the perception of customers that the company that sells the product or service is honest and credible. (Morgan and Hunt 1994). There are different aspects that are related with the level of trust. The first one is related with the long-lasting life in the market of product or service. On the other hand, also being ethical and have a huge market share increase the level of trust of a company. (Young and Albaum, 2003). Trust is positively related with service quality and loyalty. Different authors measure trust variables by the repetition of purchases that a customer does for a specific product or service. (Garbarino and Johnson, 1999). On the other hand, another author, Pirch (2008) argues that trust is a very strong full prediction variable. For those reason I have choose to explain and to study the variable of trust curing this

research and to study how trust is related with quality service and customer loyalty on tourism industry. (Delgado-Ballester and Monera-Alemán, 2005).

**H2:** There is positive relationship between service quality and trust.

**H0:** There is not a positive relationship between service quality and trust.

### 2.3. Perceived value

Another important variable that has been studied during this research is perceived value. Perceived value is related with amount of money that a customer is willing to pay for a product or service. Perceived value is a multifaceted construct that includes both tangible and intangible elements. Customers assess the benefits they receive against the sacrifices made, considering factors such as price, service quality, and overall experience (Zeithaml, 1988). Studies have indicated a strong positive relationship between perceived value and customer loyalty (Sweeney & Soutar, 2001). Investigating perceived value in the context of 3- and 4-star hotels in Durres will shed light on the specific elements that contribute to customer loyalty in this unique tourism setting.

This perception is directly related with the ability that has one product or service to meet customer expectations and needs. It is crucial for businesses, especially business that operates in service industries, to understand customer perceptions by studying consumer behaviour. This help business to build a competitive advantage towards their competitors and to improve their marketing strategy. (Sweeney & Soutar, 2001). It has been studied and noticed from different authors the positive relationship between service quality and perceived value. (Birgelen, Wetzels, & de Ruyter, 1997). Other authors stated that perceived value is one of the most important factors that influence the willing to buy a good or a service. (Bolton & Drew, 1991). It is very difficult to measure the qualities of a service because of its intangible characteristics. Service quality is measured by different factors. (Taylor & Baker, 1994). In this case the perceive quality of the service can be find by counting the difference between customer expectations and customer perception. (Lehtinen & Lehtinen, 1982)

**H3:** There is positive relationship between service quality and perceived value.

**H0:** There is not a positive relationship between service quality and perceived value.

### 2.4. Customer expectations

Understanding and managing customer expectations is crucial for service providers in the hospitality industry. Customer expectations act as a benchmark against which actual experiences are compared, influencing overall satisfaction and loyalty (Oliver, 1980). In the Albanian tourism industry, examining how customer expectations align with the services provided by 3- and 4-star hotels in Durres will contribute to a comprehensive understanding of the factors influencing customer loyalty.

Customer expectations are important to be studied because are the ones that influence customer behaviours and the willingness to buy a certain product or service. (Kotler, 2000). The expectations that one customer can provide for a specific product or service is related with the different characteristics of one product or service. Some of the most important characteristics that influence customer expectations are quality of the product or service, price, advertising, promotions, etc. A product or service can ensure competitive advantages towards other competitors in the moment that the product or service exceed customer expectations. (Kotler, 2000). There is one famous statement regarding this as "If a customer expects a bad level of quality and receives it, he/she will reduce his/her level of preference for the brand". Boulding, Kalra, Staelin, & Zeithaml, 1993); (Anantharathan Parasuraman, Zeithaml, & Berry, 1985). A high customer expectation and a high service quality toward those expectations take customers to repurchasing decisions. (Kotler, 2000). Customer satisfaction

Customer expectation is the key to customer satisfaction, delight and loyalty stated by (Kotler, 2000). Service providers must identify the needs and expectations of the customer to achieve higher customer expectations (Arun Parasuraman, Berry, & Zeithaml, 1991). Managing and fulfilling the customer expectations is a good tool to enable the customers satisfied (Pitt & Jeantrout, 1994).

**H4:** There is positive relationship between service quality and customer expectation.

**H0:** There is not a positive relationship between service quality and customer expectation.

## 3. Table Figures and Equations

A quantitative survey has been studied to measure the relationship between the variables that has been taken into consideration during the literature review. All the data has been gathered from a questionnaire that has been made to customers that has been accommodate in the hotels of 3-4 stars in Durres during May-September 2023. The questions in the survey were adapted to identify the relationship that exists between the variables taken into consideration such as trust, perceived value and customer expectation toward service quality and customer loyalty. The questionnaire was designed based on Likert scale analyses in a Five Point Scale where number 1 stands for strongly disagree (Completely Disagree) and number 5 stands for strongly agree (Completely Agree) and number 3 stands for no opinion or not important (Natural Opinion). The survey for this study has been applied to 550 tourist that has been accommodated in different hotels of 3 and

4 stars in Durres, from May to September 2023. The population has answered to the questionnaire were customers of those businesses in the city of Durres. The survey has been divided into 5 dimensions. These four dimensions are consisted of Service Quality (SQ), Customer Perceived Value (CPV), Trust (T) and Customer Loyalty (CL) and customer expectations. The survey questionnaire design is derived from multiple-item measurement scales.

**Table 1:** Explaining the descriptive statistics of the variables: Customer Loyalty, Trust, Service Quality, Perceived Value, Customer Expectation

<b>5 Variables:</b> <i>Customer Loyalty, Trust, Service Quality, Perceived Value, Customer Expectation</i>						
<i>Simple Statistics</i>						
<i>Variable</i>	<b>N</b>	<b>Mean</b>	<b>Std Dev</b>	<b>Sum</b>	<b>Minimum</b>	<b>Maximum</b>
<i>Customer Loyalty</i>	583	4.28431	0.84207	2498	1.25000	5.00000
<i>Trust</i>	583	4.24057	0.87203	2472	1.25000	5.00000
<i>Service Quality</i>	583	4.66123	0.67394	2718	1.25000	5.00000
<i>Perceived Value</i>	583	4.39751	0.84437	2564	1.25000	5.00000
<i>Customer Expectation</i>	584	4.17551	0.77883	2439	0.50000	9.50000

Source: SAS Statistics, 2023

The variables have different means and standard deviations, indicating variations in responses. Service Quality has the highest mean, suggesting that, on average, respondents rated service quality more positively than the other variables. Customer Loyalty has an average score of approximately 4.28, with a standard deviation of 0.84. The scores range from a minimum of 1.25 to a maximum of 5.00, indicating variability in responses. The sum of all loyalty scores is 2498, based on 583 observations. On the other hand, trust has an average score of approximately 4.24, with a standard deviation of 0.87. The scores range from a minimum of 1.25 to a maximum of 5.00, like Customer Loyalty. The sum of all trust scores is 2472, based on 583 observations. Service Quality has the highest mean among the variables, with an average score of approximately 4.66. The standard deviation is 0.67, indicating relatively lower variability compared to Customer Loyalty and Trust. The sum of all service quality scores is 2718, based on 583 observations. Perceived Value has an average score of approximately 4.40, with a standard deviation of 0.84. The scores range from a minimum of 1.25 to a maximum of 5.00. The sum of all perceived value scores is 2564, based on 583 observations. Customer Expectation has an average score of approximately 4.18, with a standard deviation of 0.78. Notably, the minimum score is 0.50, and the maximum is 9.50, suggesting a wider range of responses compared to the other variables. The sum of all customer expectation scores is 2439, based on 584 observations.

**Table 2:** Cronbach Coefficient Alpha

<b>Variables</b>	<b>Alpha</b>
<b>Raw</b>	0.876218
<b>Standardized</b>	0.875738

*Cronbach Coefficient Alpha with Deleted Variable*

<i>Deleted Variable</i>	<b>Raw Variables</b>		<b>Standardized Variables</b>	
	<b>Correlation with Total</b>	<b>Alpha</b>	<b>Correlation with Total</b>	<b>Alpha</b>
<i>Customer Loyalty</i>	0.763586	0.835471	0.757462	0.836554
<i>Trust</i>	0.718203	0.847617	0.713081	0.847376
<i>Service Quality</i>	0.582721	0.877026	0.583756	0.877694
<i>Perceived Value</i>	0.733992	0.843075	0.735249	0.841997
<i>Customer Expectation</i>	0.742353	0.841505	0.740223	0.840783

Source: SAS Statistics, 2023



The first test that has been made toward this questionnaire was to adapt Cronbach Alpha to study the reliability of the questionnaire and variables that has been taken in consideration. According to the table above Cronbach Alpha is 0.875738 that means that the questionnaire is reliable, and the data can set a trustable correlation and dependency of the hypothesis stated during the literature review. Cronbach's Alpha is a measure of internal consistency reliability, and it assesses how well a set of items or variables measure a single latent construct. The values provided are correlations with the total score and the Cronbach's Alpha both with and without each variable. When the "CL" variable is deleted, the Cronbach's Alpha slightly increases from 0.835471 to 0.836554. The increase is very marginal, suggesting that removing this variable has a minimal impact on internal consistency. Deleting the "T" variable also leads to a marginal increase in Cronbach's Alpha from 0.847617 to 0.847376 with raw variables. Removing the "SQ" variable results in a decrease in Cronbach's Alpha from 0.877026 to 0.877694 with raw variables. For the "PV" variable, there is a slight decrease in Cronbach's Alpha from 0.843075 to 0.841997 when deleted with raw variables. Deleting the "CE" variable leads to a slight decrease in Cronbach's Alpha from 0.841505 to 0.840783 with raw variables. In general, these changes are relatively small, suggesting that the internal consistency of the scale is not drastically affected by deleting any single variable. However, it's important to consider the context and theoretical implications of each variable before deciding whether to retain or remove them from the scale.

**Table 3:** The division of the sample divided by groups according to their type of travelling.

Category	Category			
	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Business Travels	26	4.45	26	4.45
Couples	167	28.60	193	33.05
Families	178	30.48	371	63.53
Groups	87	14.90	458	78.42
Solo Traveler	126	21.58	584	100.00

Source: SAS Statistics, 2023

In table number 3 the sample is divided by groups according to their type of travelling, such as: business travellers, couples, families, groups, solo travellers. From the statistics of table 3 is shown that the categories of travellers that visit Durres are mostly couples and families. Couple category has 167 respondents, representing 28.6% of the total. On the other hand, the cumulative percentage is 33.05%. family's category has 178 respondents, representing 30.48 % of the total. On the other hand, the cumulative percentage is 63.55%. The information provides a clear picture of the distribution across different categories. The accumulative percent is helpful for understanding the overall composition of the sample through the different categories.

**Table 4:** Explaining the correlations between the 5 variables: Customer Loyalty, Trust, Service Quality, Perceived Value, Customer Expectation

CORRELATIONS BETWEEN VARIABLES OF THE SAMPLE					
	Customer Loyalty	Trust	Service Quality	Percived Value	Customer Expectation
CUSTOMER LOYALTY	1.00000	0.68881	0.48980	0.66422	0.63904
TRUST	0.68881	1.00000	0.44315	0.58149	0.64888
SERVICE QUALITY	0.48980	0.44315	1.00000	0.54654	0.51771
PERCIVED VALUE	0.66422	0.58149	0.54654	1.00000	0.63015
CUSTOMER EXPECTATION	0.63904	0.64888	0.51771	0.63015	1.00000

Source: SAS Statistics, 2023

Table 4 explain the correlation between different variables that I am going to study in this research. Each column and row provide a variable and the intersection between them provide the correlation coefficient. The statistics above shows that customer loyalty have a positive correlation with trust (0.68881), perceived value (0.66422), customer expectations (0.63904). On the other hand, it explains a moderate positive correlation with service quality. On the other hand, service quality has a moderate positive correlation with customer loyalty (0.48980) and perceived value (0.54654) and has also a weak positive correlation with trust and customer expectation. Those correlation can provide only an insight of the dependency between the variables; further analyses should be done to verify the hypothesis.

**Table 5: Dependent Variable: Customer Loyalty, Independent Variable: Service Quality****H1:** There is a positive relationship between customer loyalty service quality.**H0:** There is not a positive relationship between customer loyalty service quality.

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	100.0279964	33.3426655	61.75	<.0001
Error	579	312.6608973	0.5400015		
Corrected Total	582	412.6888937			
R-Square	Coeff Var	Root MSE	Customer Loyalty Mean		
0.242381	17.15209	0.734848	4.284305		
Source	DF	Type I SS	Mean Square	F Value	Pr > F
Service Quality	3	100.0279964	33.3426655	61.75	<.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
Service Quality	3	100.0279964	33.3426655	61.75	<.0001

Source: SAS Statistics, 2023

Hypothesis H1 proposed that there is a positive relationship between customer loyalty and service quality. In summary, the overall model, with "Service Quality" as an independent variable, is statistically significant and explains a significant portion of the variance in "Customer Loyalty." The specific variable "SQ" also shows a significant impact on "Customer Loyalty" based on R-squares and associated with F-statistic. The model is statistically significant ( $p < 0.0001$ ), as indicated also by the F-statistic (61.75). The R-square value is 0.2424, indicating that the model explains 24.24% of the variance in the dependent variable. The root mean squared error is 0.7348, providing a measure of the average deviation of observed values from the predicted values. By those conclusions it can be deduced that first hypothesis is verified.

**Table 6: Dependent Variable: Service Quality, Independent Variable: Trust****H2:** There is positive relationship between service quality and trust.**H0:** There is not a positive relationship between service quality and trust.

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	52.4528075	13.1132019	35.77	<.0001
Error	578	211.8911033	0.3665936		
Corrected Total	582	264.3439108			
R-Square	Coeff Var	Root MSE	Service Quality Mean		
0.198426	12.98947	0.605470	4.661235		
Source	DF	Type I SS	Mean Square	F Value	Pr > F
Trust	4	52.45280753	13.11320188	35.77	<.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
Trust	4	52.45280753	13.11320188	35.77	<.0001

Source: SAS Statistics, 2023

This output suggests that the variable "T" has a significant effect on the dependent variable "Service Quality" as the p-value is less than the conventional significance level of 0.05. The R-squared value of 0.198426 indicates that the model explains about 19.8% of the variance in the dependent variable. The F-test for the overall model is highly significant, suggesting that the model is a good fit. By those conclusions it can be deduced that also the second hypothesis is verified.

**Table 7: Dependent Variable: Service Quality, Independent Variable: Perceived value****H3:** There is positive relationship between service quality and perceived value.**H0:** There is not a positive relationship between service quality and perceived value.

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	88.2021434	29.4007145	96.64	<.0001
Error	579	176.1417674	0.3042172		
Corrected Total	582	264.3439108			
R-Square	Coeff Var	Root MSE	Service Quality Mean		
0.333664	11.83289	0.551559	4.661235		
Source	DF	Type I SS	Mean Square	F Value	Pr > F
Percived Value	3	88.20214338	29.40071446	96.64	<.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
Percived Value	3	88.20214338	29.40071446	96.64	<.0001

Source: SAS Statistics, 2023

The overall model is highly significant ( $Pr > F < .0001$ ), indicating that at least one of the predictors (in this case, "Perceived Value") has a significant effect on the dependent variable ("Service Quality"). The R-Square value of 0.333664 suggests that the model explains approximately 33.37% of the total variance in the dependent variable. The F-test for the "PV" predictor is also highly significant ( $Pr > F < .0001$ ), indicating that this variable significantly contributes to explaining the variance in "Service Quality". Overall, it seems like the model is a good fit for the data, and "PV" is an important predictor of "SQ." In this case also the third hypothesis is verified.

**Table 8: Dependent Variable: Service Quality, Independent Variable: Customer Expectation****H4:** There is positive relationship between service quality and customer expectation.**H0:** There is not a positive relationship between service quality and customer expectation.

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	88.3373017	8.0306638	26.05	<.0001
Error	571	176.0066091	0.3082427		
Corrected Total	582	264.3439108			
R-Square	Coeff Var	Root MSE	Service_Quality Mean		
0.334176	11.91092	0.555196	4.661235		
Source	DF	Type I SS	Mean Square	F Value	Pr > F
Customer Expectation	11	88.33730166	8.03066379	26.05	<.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
Customer Expectation	11	88.33730166	8.03066379	26.05	<.0001

Source: SAS Statistics, 2023

This analysis suggests that the model, with customer expectations as a variable, is statistically significant in explaining the variation in service quality. The low p-value ( $<.0001$ ) indicates that the relationship is highly unlikely to be due to chance. The R-squared value suggests that around 33.42% of the variability in service quality is explained by the model. In this case also the fourth hypothesis is verified.

#### 4. Conclusions

The main determinants of customer loyalty that are identified and studied in past researchers are: satisfaction, trust, commitment, involvement, perceived risk, switch costs and habit. All these factors are positive correlated with loyalty. Identifying and analysing factors affecting loyalty is a very important step for every company that implements customer relationship management strategies and loyalty programs, no matter what industry they work in. Using the results of this documentary research, managers can gain a better perspective of the importance of loyalty determinants. Knowing and understanding the factors with the greater impact on customer loyalty, the sellers can adjust their relational programs, for every target group or marketing segment. Loyalty determinants and their effect on loyalty construct are different in each field, that is why a deeply investigating must be done for each industry.

The study underscores the pivotal role of service quality in shaping customer loyalty within the Albanian tourism industry especially in 3- and 4-star hotels in Durres that must prioritize continuous improvement in service delivery to meet and exceed customer expectations. Trust emerges as a cornerstone for building lasting relationships with guests in the hospitality sector of Durres. Hotel management should focus on transparent communication, reliability, and consistency to foster and maintain trust among their clientele. The findings also reveal the significant impact of perceived value on customer loyalty. Balancing pricing strategies with the perceived quality of services is critical for hotels aiming to enhance overall value perceptions and, consequently, guest loyalty. On the other hand, customer expectations are dynamic and play a crucial role in shaping loyalty in the tourism sector of Albania. Adapting services to evolving customer expectations is imperative for hotels in Durres to stay competitive and maintain guest satisfaction.

As stated during the study, this research highlights the interdependence of service quality, trust, perceived value, and customer expectations. Hotels should adopt an integrated approach, recognizing the symbiotic relationships between these factors to create a comprehensive and satisfactory guest experience. Practical recommendations for hotel managers include investing in employee training to enhance service quality, implementing transparent practices to build and sustain trust, revising pricing strategies for optimal perceived value, and employing continuous customer feedback mechanisms to stay attuned to evolving expectations. The study sheds light on the competitive landscape of the Albanian tourism industry, emphasizing the need for hotels to differentiate themselves through exceptional service, reliability, and customer-centric strategies. Acknowledge any study limitations and suggest potential areas for future research, such as the impact of technological advancements on customer loyalty or the influence of cultural nuances. Highlight the importance of staying adaptive in an ever-evolving industry, encouraging ongoing research to inform strategic decision-making.

The result of this study shows that the relationship between service quality and trust is stronger than service quality and perceived value while, the relationship between perceived value and customer loyalty is stronger than trust and customer loyalty. Additionally, the scale reliability was confirmed for service quality, trust, perceived value, and customer loyalty. The findings of this study provide us with the understanding of the key drivers of consumer loyalty. The results of this study also show that improving service quality leads to increase appropriate customer loyalty among subscribers of various services, and customers desire to deal with service providers that provide excellent services with reasonable prices. The findings of the study indicate that good service quality could cause customer perceived value and trust and customer perceived value and trust lead to increasing loyal customer. In other words, the managers could improve customer perceived value and trust by emphasizing on service quality and consequently gain customers that are more loyal. A perceived superior value by customer is widely accepted to be a competitive advantage for the firm. Moreover, it is valid to suggest that customers' loyalty may have a significant impact on the revenue of the Malaysian services sector. Hence, while managers attempt to create profitable strategies for the company and try to develop larger market share, they should not forget the importance of customer loyalty. Attention should be given to loyalty of customer in strategy development to maintain service quality, improve trust and increase customer perceived value.

#### Nomenclature

SQ	Service Quality
CPV	Customer Perceived Value
T	Trust
CL	Customer Loyalty
SAS	Statistical Analysis System

#### Appendix

Data Set	WORK.TEST
Dependent Variable	Service_Quality
Selection Method	None

Number of Observations Read	584	
Number of Observations Used	583	
Class Level Information		
Class	Levels	Values
Customer_Loyalty	5	1.25 2.5 2.75 3.75 5
Trust	5	1.25 2.5 3.5 3.75 5
Percived_Value	4	1.25 2.5 3.75 5
Custmomer_Expectatio	12	0.5 1 1.5 2 2.5 3 3.5 3.75 4 4.5 5 9.5
Dimensions		
Number of Effects	5	
Number of Parameters	27	

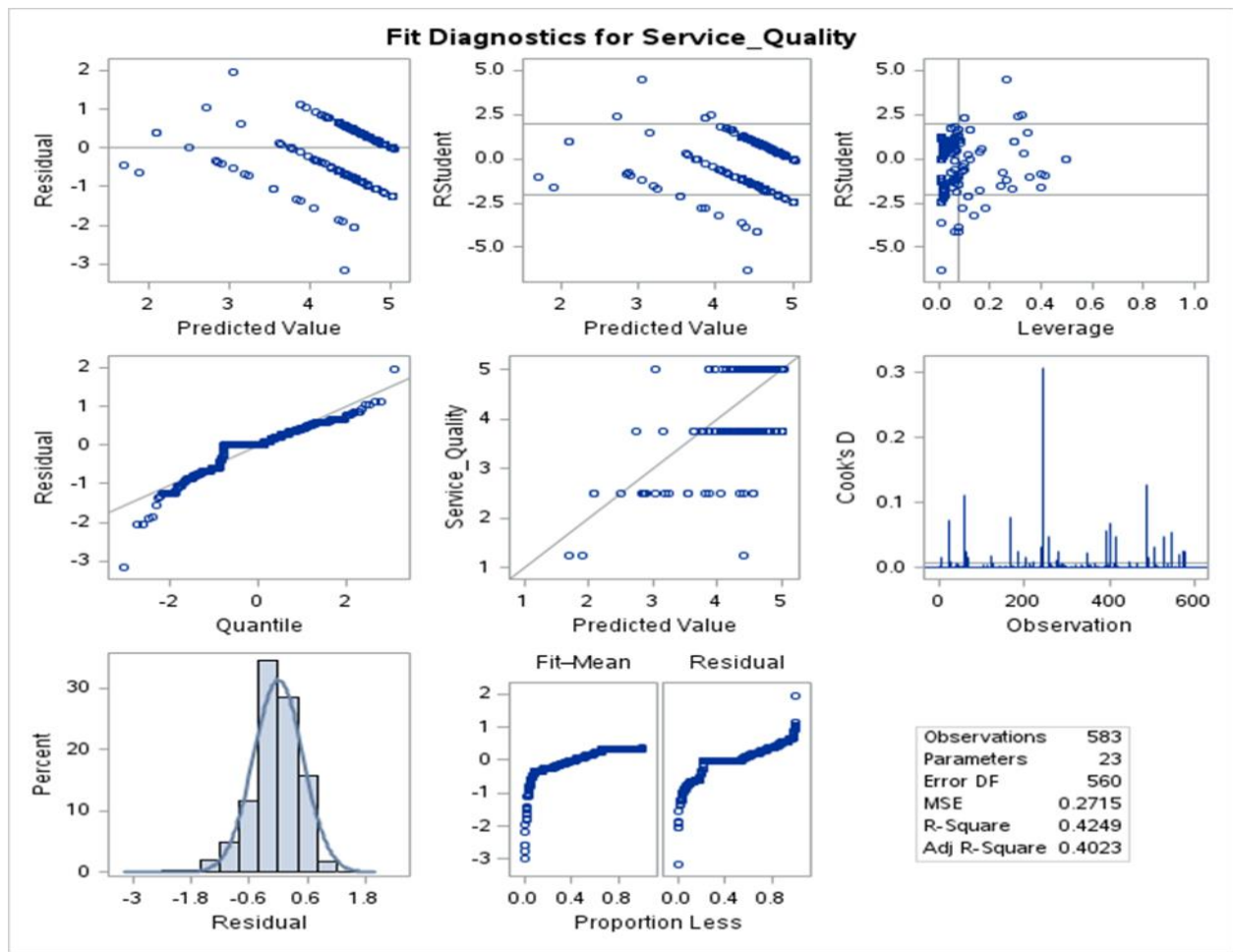
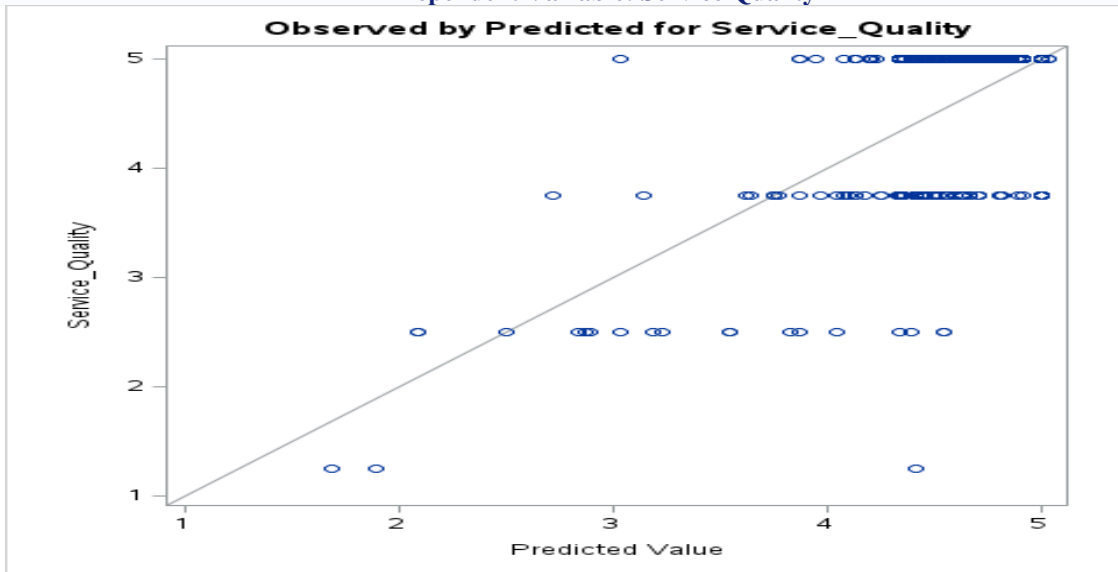
Least Squares Summary				
Step	Effect Entered	Number Effects In	Number Parms In	SBC
* Optimal Value of Criterion				
0	Intercept	1	1	-454.7476
1	Customer_Loyalty	2	5	-597.0817
2	Trust	3	9	-587.9783
3	Percived_Value	4	12	-658.6924*
4	Custmomer_Expectatio	5	23	-637.1440

## Least Squares Model (No Selection)

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	112.31300	5.10514	18.80	<.0001
Error	560	152.03091	0.27148		
Corrected Total	582	264.34391			
Root MSE	0.52104				
Dependent Mean	4.66123				
R-Square	0.4249				
Adj R-Sq	0.4023				
AIC	-152.61226				
AICC	-150.46172				
SBC	-637.14395				
Parameter Estimates					
Parameter	DF	Estimate	Standard Error	t Value	Pr >  t
Intercept	1	5.179969	0.525145	9.86	<.0001
Customer_Loyalty 1.25	1	-0.281232	0.301989	-0.93	0.3521
Customer_Loyalty 2.5	1	-0.081746	0.128371	-0.64	0.5245
Customer_Loyalty 2.75	1	0.291987	0.526801	0.55	0.5796

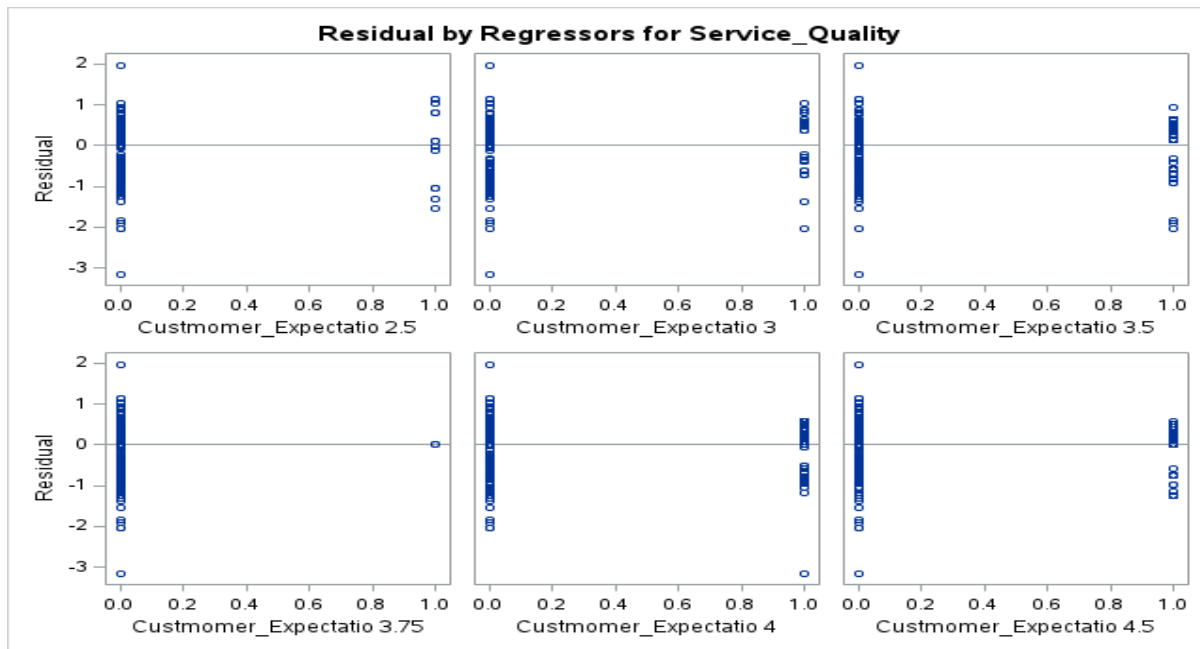
Parameter Estimates					
Parameter	DF	Estimate	Standard Error	t Value	Pr >  t
Customer_Loyalty 3.75	1	-0.179969	0.065525	-2.75	0.0062
Customer_Loyalty 5	0	0	.	.	.
Trust 1.25	1	0.073016	0.210921	0.35	0.7293
Trust 2.5	1	0.118955	0.122837	0.97	0.3333
Trust 3.5	1	0.471957	0.527131	0.90	0.3710
Trust 3.75	1	-0.107277	0.062887	-1.71	0.0886
Trust 5	0	0	.	.	.
Percived_Value 1.25	1	-1.580787	0.259812	-6.08	<.0001
Percived_Value 2.5	1	-0.479990	0.126910	-3.78	0.0002
Percived_Value 3.75	1	-0.210625	0.059065	-3.57	0.0004
Percived_Value 5	0	0	.	.	.
Customer_Expectatio 0.5	1	-0.936905	0.819816	-1.14	0.2536
Customer_Expectatio 1	1	-0.741764	0.800012	-0.93	0.3542
Customer_Expectatio 1.5	1	-1.698700	0.599782	-2.83	0.0048
Customer_Expectatio 2	1	-1.546309	0.594297	-2.60	0.0095
Customer_Expectatio 2.5	1	-0.866472	0.554655	-1.56	0.1188
Customer_Expectatio 3	1	-0.542615	0.538706	-1.01	0.3142
Customer_Expectatio 3.5	1	-0.337921	0.527968	-0.64	0.5224
Customer_Expectatio 3.75	1	-0.932097	0.643759	-1.45	0.1482
Customer_Expectatio 4	1	-0.261331	0.527757	-0.50	0.6207
Customer_Expectatio 4.5	1	-0.177563	0.526491	-0.34	0.7360
Customer_Expectatio 5	1	-0.175454	0.526696	-0.33	0.7392
Customer_Expectatio 9.5	0	0	.	.	.

**MODEL1**  
**Dependent Variable: Service Quality**









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# Institucionalna zaštita od diskriminacije kao deo međunarodnog i nacionalnog okvira zaštite ljudskih prava

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## Apstrakt

U ovom radu autori su učinili pokušaj da bliže objasne pojam autonomije ličnosti, kao i pravne i društvene pretpostavke za njeno potpuno ostvarivanje. U tom smislu, posebna pažnja je usmerena na institucije za zaštitu od diskriminacije, kao i na ostvarivanje prava na jednakost uopšte, kao ključnih pretpostavki za ostvarivanje autonomije ličnosti. Istovremeno, analizirane su odredbe međunarodnih dokumenata, kako univerzalnih, tako i regionalnih a posebno onih koji su doneti u okvirima evropskih organizacija Saveta Evrope, ali i Evropske unije. Takođe, deo rada je posvećen i analizi nacionalnih akata kojima je bliže uređeno pitanje zabrane diskriminacije, odnosno ostvarivanja jednakosti i ravnopravnosti u pogledu uživanja osnovnih ljudskih prava i sloboda. Istovremeno, ukazano je na značaj rada vansudskih institucija, koje za cilj imaju borbu protiv diskriminacije, poput Poverenika za ravnopravnost koji funkcioniše u pravnom sistemu Republike Srbije.

*Ključne reči: ljudska prava, zabrana diskriminacije, autonomija ličnosti Poverenik za ravnopravnost Republike Srbije*

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## 1. Uvod

Ostvarivanje ljudskih prava i sloboda, a samim tim i autonomija ličnosti, prema savremenim doktrinarnim stavovima treba da obezbede jednakost ljudi u najopštijem smislu. Zbog toga, ostvarivanje ljudskih prava, kako na međunarodnom, tako i na nacionalnom nivou podrazumeva stvaranje opšteg normativnog okvira kao i uslova za njihovu praktičnu realizaciju i posebno, formiranje efikasnih mehanizama za njihovu zaštitu. Eksplicitan je naučni stav da „ljudska prava...predstavljaju normativni podsistem međunarodnog prava, koga čine pravila i standardi koji za predmet imaju prava, slobode i odgovornost pojedinaca i ljudskih kolektiviteta (grupa). (Kreča, 2010) U praktičnom smislu, ljudska prava moraju, takođe, biti obezbeđena „...ne samo višestepenom sudskom zaštitom u formalnom smislu, već i u smislu delotvorne (uspešne) i efektivne (a ne samo efikasne) materijalnopravne i procesnopravne zaštite. (Perović, 2012)

Kada je reč o definisanju položaja čoveka i ljudskih prava, autonomija ličnosti kao zajednička karakteristika međunarodnih i nacionalnih pravnih sistema postaje „opšte mesto“ svih pravnih dokumenata bez obzira na domen njihove primene.

Zbog toga, pažnja u ovom radu usmerena je pre svega na ostvarivanje autonomije ličnosti kroz ravnopravnost svih pojedinaca u ostvarivanju zajemčenih ljudskih prava, kako u međunarodnim okvirima, tako i u Republici Srbiji, odnosno na ukazivanje na značaj vansudskih mehanizama za zaštitu ravnopravnosti, odnosno borbu protiv diskriminacije.

## 2. Autonomija ličnosti kao paradigma zabrane diskriminacije u međunarodnim aktima

Oblast ljudskih prava intenzivno je menjana od sredina XX veka, odnosno od kraja Drugog svetskog rata, kada je započela intenzivna normativna delatnost u ovoj oblasti sa ciljem da se izgrade odgovarajući međunarodni pravni standardi i odgovarajući mehanizmi zaštite u ovoj oblasti. Zajednička karakteristika ovih dokumenata jeste da sadrže skup pravnih garancija kojima se zabranjuje diskriminacija i koji čine pravo na jednakost, kao temelj autonomije ličnosti.

Kada je reč o Ujedinjenim nacijama, kao univerzalnoj međunarodnoj organizaciji čiji je jedan od osnovnih zadataka zaštita ljudskih prava i sloboda na planetarnom nivou, pravo na jednakost proklamovano je kako Poveljom Ujedinjenih nacija, tako i Univerzalnom deklaracijom o ljudskim pravima. Oba dokumenta proklamuju zabranu svih oblika diskriminacije u pogledu uživanja prava i sloboda zajemčenih ovim aktima. Daljom normativnom aktivnošću u okviru

Ujedinjenih nacija donete su posebne konvencije kojima se tretiraju različiti oblici diskriminacije i obezbeđuje zaštita posebno osetljivim kategorijama lica poput žena i dece.

Posebno je značajna Konvencija o ukidanju svih oblika rasne diskriminacije kojom je široko definisana rasna diskriminacija kao svako razlikovanje, isključivanje, ograničavanje ili davanje prvenstva koje se zasniva na rasi, boji, precima, nacionalnom ili etničkom poreklu koji imaju za svrhu ili za posledicu da naruše ili da kompromituju priznavanje, uživanje ili pod jednakim uslovima ostvarivanje ljudskih prava i osnovnih sloboda, kako na političkom i ekonomskom, tako i na socijalnom i kulturnom polju. Učesnici u izradi nacrtu Konvencije rukovodili su se već postojećom definicijom rasne diskriminacije koja je usvojena od strane Međunarodne organizacije rada i UNESCO-a. Rasna diskriminacija definisana je kao praksa koja ima diskriminatornu svrhu ili efekat. (Kwong Leung et al, 2003).

Takođe, važno je naglasiti i da je Konvencijom formiran i poseban mehanizam za borbu protiv diskriminacije u formi ugovornog tela, odnosno Komiteta. Komitet za ukidanje rasne diskriminacije UN kao kontrolni mehanizam u cilju sprovođenja odredbi Konvencije u državama članicama razmatra izveštaje koje države članice imaju obavezu da podnesu, a koje se odnose na ispunjavanje obaveza preuzete Konvencijom. Komitet podnosi izveštaj Generalnoj skupštini UN i na osnovu toga može uputiti preporuke i sugestije opšteg karaktera, a koje se odnose na uočene oblike diskriminacije u državama članicama.<sup>1</sup>

U okvirima Ujedinjenih nacija doneta je i Konvencija o ukidanju svih oblika diskriminacije žena, koja predstavlja međunarodni pravni instrument od najvećeg značaja, kada je reč o zaštiti prava i sloboda žena, zbog čega se često naziva i povelja prava žena. Ova Konvencija jasno izražava obavezu rodne jednakosti, odnosno nedvosmisleno definiše uspostavljanje jednakosti žena u svim sferama, od javne do privatne, uključujući zdravlje, obrazovanje i učestvovanje u političkom životu. (Hernandez-Truyol, 1996)

Kako bi se uspostavila i efikasna kontrola legislativnih, ali i ostalih mera i aktivnosti koje države članice preduzimaju na nacionalnom nivou kako bi se odredbe Konvencije zaista i sprovođile u pojedinačnim pravnim sistemima, formiran je i u ovom slučaju kontrolni mehanizam u formi posebnog Komiteta protiv diskriminacije žena koji je ovlašćen da po podnetim pojedinačnim izveštajima država daje odgovarajuće preporuke u cilju poboljšanja utvrđenog stanja u smislu ostvarivanja prava koje pripadaju ženama, odnosno upućuje smernice u kom pravcu i kojim aktivnostima bi trebalo pristupiti kako bi se ostvarila još bolja zaštita prava žena.<sup>2</sup>

Paralelno sa normativnom aktivnošću koja se razvijala u okvirima organizacije Ujedinjenih nacija i imala kao krajnji cilj zaštitu autonomije ličnosti pojedinca zabranom svih oblika diskriminacije u uživanju i zaštiti ljudskih prava i osnovnih sloboda, započeo je proces donošenja međunarodnih akata regionalnog karaktera. U tom smislu, značajni su akti doneti u okvirima evropskih organizacija, a posebno Saveta Evrope i Evropske unije.

Evropskom konvencijom za zaštitu ljudskih prava i osnovnih sloboda utvrđena je zabrana diskriminacije opšteg karaktera i to kao osnovni preduslov za ostvarivanje svih ostalih ljudskih prava i sloboda koje su utvrđene Konvencijom. Donošenjem Protokola uz Konvenciju koji još uvek nije ratifikovan od strane svih država članica proširuje se obim zaštite od diskriminacije u smislu jednakog tretmana svih pojedinaca u pogledu uživanja ljudskih prava, uključujući i prava koja su zajemčena u okvirima nacionalnih pravnih sistema. Na ovaj način unapređena je zaštita pojedinaca, jer se ratifikacijom Protokola države članice obavezuju da građanima u okvirima svojih jurisdikcija omogućе korišćenje svih ljudskih prava bez obzira da li su proklamovana unutrašnjim pravnim poretkom ili članovima Konvencije.

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<sup>1</sup> Tako je u zaključnim razmatranjima na sesiji održanoj u **avgustu 2023.** godine, **Komitet** je izrazio zabrinutost za diskriminaciju koja se sprovodi u **Republici Hrvatskoj** oblastima zapošljavanja i obrazovanja prema licima koja pripadaju srpskoj i romskoj nacionalnoj manjini. Takođe, Komitet je izrazio zabrinutost i zbog velike nesrazmere u broju slučajeva diskriminacije koji su zvanično registrovani kao kršenje Zakona o borbi protiv diskriminacije sa jedne strane i mnogo većeg broja slučajeva kršenja jednakosti, odnosno diskriminacije koji su otkriveni u anketama sprovedenim među pripadnicima nacionalnih manjina, ali i lica koja nisu državljani. Takođe, Komitet je takođe izrazio zabrinutost zbog toga što nacionalni sudovi još uvek nisu završili krivično gonjenje lica osumnjičenih za kršenje međunarodnog prava kao i uopšte trend pada sprovođenja istraga i postupaka protiv ovih lica od 2013. godine. Takođe, Komitet je ispitivao i razlike u sprovođenju ovakvih postupaka i izricanju kazne a u pogledu toga da li su u pitanju lica srpske ili hrvatske nacionalnosti kao počinioci dela, te naložio državi Hrvatskoj da sprovede efikasne istrage i postupke protiv svih ovih lica, nezavisno od njihove nacionalne pripadnosti.

<sup>2</sup> U tom smislu, ilustrativan je primer zaključaka koji je **Komitet protiv diskriminacije žena** uputio **Republici Srbiji**, a u kojem se između ostalog preporučuju Republici Srbiji da omogući Zaštitniku građana da podigne svest o značaju njegovog delovanja za postizanje rodne ravnopravnosti među ženama, uključujući i mehanizam upućivanja pritužbi, te da ih ohrabri da više koriste ovo sredstvo zaštite prava.

### 3. Zaštita od diskriminacije u pravu Evropske unije

U okvirima Evropske unije, regulativa koja se odnosila na zabranu diskriminacije značajno je evoluirala sa razvojem same zajednice. U početku ovi propisi odnosili su se samo na oblast radnih odnosa i regulisali su diskriminaciju po osnovu pola na način da su predviđenim merama države onemogućavane da steknu konkurentsku prednost tako što bi ženama za isti posao nudili manje plate odnosno lošije uslove rada. Godinama, ova oblast je evoluirala, tako da su se antidiskriminatorske mere počele uvoditi i u sferu penzionih davanja, pitanja koja su se odnosila na prava trudnica, kao i u oblast socijalnog osiguranja.

Značajan korak u oblasti zaštite ljudskih prava, pa samim tim i prava na jednakost u okviru Evropske unije bilo je donošenje Povelje o osnovnim pravima EU. Povelja, iako u trenutku donošenja pravno neobavezujući akt, saržala je katalog ljudskih prava i obaveza, koja su već bila regulisana u ustavima država članica, odnosno najvažnijim međunarodnim aktima o ljudskim pravima. U okviru Povelje naglašena je jednakost svih pojedinaca i proklamovana je zabrana bilo kog oblika diskriminacije. Zbog specifičnog karaktera evropske zajednice naglašena je zabrana diskriminacije po osnovu državljanstva, čime se afirmiše i ovaj aspekt autonomije ličnosti. (Eklund&Kilpatric 2021)

Usvajanjem Ugovora iz Lisabona 2009.godine Povelja osnovnim pravima EU dobila je karakter pravno obavezujućeg dokumenta i na taj način po svom statusu izjednačena sa osnivačkim ugovorima EU. Pravne posledice promene statusa Povelja ogledaju se u obavezi svih institucija EU da se pridržavaju odredbi povelje, kao i samih država članica, ali samo kada implementiraju pravo EU. Praktično, to znači da su pojedinci dobili mogućnost da se žale na zakonodavstvo EU, kao i na nacionalne propise, ukoliko su doneti u cilju implementacije prava EU, ukoliko nisu u saglasnosti sa Poveljom o osnovnim pravima EU.

Paralelno sa donošenjem novih propisa koji su regulisali ljudska prava u Evropskoj uniji, stvarani su i mehanizmi za njihovu promociju i unapređenje. Tako je oformljena Evropska agencija za osnovna prava, kao i Evropski institut za rodnu ravnopravnost. Takođe, značajan je i rad Evropske mreže institucija za ravnopravnost<sup>3</sup> koja promoviše ljudska prava, a posebno pravo na jednakost u Evropi i pomaže rad nacionalnih institucija za zaštitu ravnopravnosti.

Propisi EU koji se odnose na jednako postupanje, odnosno zaštitu ravnopravnosti, iako kritikovani od strane pojedinih autora koji smatraju da je njihova sadržina zasnovana na suviše apstraktnim pojmovima i definicijama, te da ne uspostavljaju jasne kriterijume za primenu u praksi (Cornides, 2012) u prethodnih nekoliko godina ne samo da su širili opseg zaštite uvođenjem sve više osnova po kojima je diskriminacija zabranjena, već upućuju države članice da na nacionalnom nivou oforme i posebne institucije koje bi postupale nezavisno i pružale pravnu pomoć i zaštitu žrtvama diskriminacije. Tako su na osnovu posebne Direktive o implementaciji principa jednakih prilika i jednakog tretmana muškaraca i žena u oblasti zapošljavanja (Direktiva 2006/54/EC) države članice obavezane da u sopstvenim pravnim sistemima oforme jednu ili više institucija čiji bi zadatak bio da promovišu, nadgledaju, unapređuju i štite pravo na ravnopravnost svih pojedinaca bez diskriminacije po osnovu pola. Iako nisu postojala posebna uputstva kako bi ove institucije trebalo da izgledaju, države članice su ili postojeće institucije upodobile traženim zahtevima ili su formirale potpuno nove institucije koje bi adekvatno odgovorile postavljenim standardima u zaštiti od diskriminacije.<sup>4</sup>

Evropska komisija je predložila dve nove direktive<sup>5</sup> sa ciljem da se omogući bolja i efikasnija primena antidiskriminatorskih pravila EU. Reč je o (1) Predlogu Direktive Evropskog parlamenta i Saveta o standardima za institucije za zaštitu ravnopravnosti u oblasti jednakog tretmana i jednakih mogućnosti muškaraca i žena i oblasti zapošljavanja i izbora zanimanja<sup>6</sup> i (2) Predlogu Direktive Saveta o standardima za institucije za zaštitu ravnopravnosti o jednakom tretmanu pojedinaca nezavisno od njihove rasne ili etničke pripadnosti, jednakom tretmanu u oblasti zapošljavanja i profesije između pojedinaca nezavisno od njihove veroispovesti ili uverenja, invaliditeta, starosti ili seksualne orijentacije, jednakom tretmanu muškaraca i žena u oblasti socijalnog osiguranja i u pristupu robama i uslugama<sup>7</sup>.

Navedeni predlozi imaju za cilj uspostavljanje uniformnih standarda za institucije za zaštitu ravnopravnosti kako bi se osiguralo da svi pojedinci u državama članicama uživaju zajednički minimalni stepen zaštite u oblasti zaštite od diskriminacije. Predlozi se, pre svega odnose na oblasti koje podrazumevaju unapređenje kompetencija i nadležnosti ovih

<sup>3</sup> Ova mreža okuplja 46 organizacija iz 34 evropske države

<sup>4</sup> U Republici Srbiji osnovana je institucija Poverenika za zaštitu ravnopravnosti

<sup>5</sup> Obe direktive predložila je Evropska komisija 7.decembra 2022.godine

<sup>6</sup> Kojom se briše čl.20 Direktive 2006/54/EC i čl.11 Direktive 2010/41/EU. Predlog je baziran na čl. 157(st.3) Ugovora o funkcionisanju EU

<sup>7</sup> Ovom Direktivom briše se član br.13 Direktive 2000/43/EC i čl.12 Direktive 2004/113/EC. Ovaj predlog zasnovan je na čl.19 st.1 Ugovora o funkcionisanju Evropske unije

institucija, njihovu samostalnost i nezavisnost, dostupnost njihovih mehanizama svim žrtvama diskriminacije, ali i unapređenje njihovog značaja u slučajevima utvrđene diskriminacije.

Posebno je značajno to što se Predlogom Direktive Evropskog parlamenta i Saveta o standardima za institucije za zaštitu ravnopravnosti u oblasti jednakog tretmana i jednakih mogućnosti između muškaraca i žena i oblasti zapošljavanja i izbora zanimanja uspostavlja i mehanizam kontrole praktičnih efekata implementiranja odredbi direktive. Naime, shodno čl.16 Predloga Direktive, Komisija bi trebala da ustanovi ključne kriterijume na osnovu kojih bi se pratili efekti direktive u praksi. Neki od tih kriterijuma bi mogli da budu sredstva, nezavisno funkcionisanje, nadležnosti, kao i efikasnost institucija za zaštitu ravnopravnosti, ali i sama struktura institucije i evolucija njenog delovanja. Na osnovu ovako generisanih podataka, ali i podataka dobijenih od drugih subjekata poput institucija koje deluju na nacionalnom nivou i nivou Evropske unije, a čije je delovanje u potpunosti ili delimično usmereno i na zaštitu prava na ravnopravnost, Komisija bi sastavljala izveštaj o primeni direktive kao i o efektima direktive u praksi.

#### **4.Zaštita od diskriminacije u pravnom sistemu Republike Srbije**

Analiza pravnog sistema Republike Srbije pokazuje da je zaštita od diskriminacije normativno uređena počev od Ustava Republike Srbije preko posebnih zakona do pojedinačnih pravnih akata.

Rešenja u Ustavu Republike Srbije, kada je reč o elementima koji definišu autonomiju ličnosti i njeno ostvarivanje, posebno ističu asprekt zabrane diskriminacije. Tako je čl.12 Ustava Republike Srbije proklamovana jednakost svih građana pred zakonom, kao i jednaka zakonska zaštita. Utvrđujući jednakost svih građana, ustavnim odredbama zabranjuje se svaki vid diskriminacije, bez obzira da li je reč o posrednoj ili neposrednoj diskriminaciji. Koristeći se „kaučuk“ normom u okviru koje se nabrajaju neki od elemenata diskriminacije, Ustavom je ostavljena mogućnost da se ovaj vid ugrožavanja ličnosti može ostvariti i drugim oblicima, koji nisu taksativno nabrojani.

Razrađujući odredbe Ustava Republike Srbije, donet je i Zakon o zabrani diskriminacije u okviru koga se prvim članom „..uređuje opšta zabrana diskriminacije, oblici i slučajevi diskriminacije kao i postupci zaštite od diskriminacije“. Istovremeno, istim članom ovog Zakona uspostavljena je i posebna, institucionalna zaštita od diskriminacije, uvođenjem posebnog, nezavisnog tela čiji je osnovni zadatak zaštita građana od svih oblika diskriminacije.

Polazeći od rešenja sadržanih u zakonu , može se zaključiti da se zaštita od diskriminacije u funkciji autonomije ličnosti ostvaruje u skladu sa Ustavom Republike Srbije i međunarodnim standardima koji se odnose na ljudska prava i osnovne slobode. Zakonom je predviđeno da svaki pojedinac ima pravo da bude efikasno štićen od svih oblika diskriminacije. Na ovaj način se konstituiše obaveza za zakonodavnu, sudsku i izvršnu vlast u Republici Srbiji, kao i pravna lica i pojedince da svojim delovanjem omoguće zaštitu, promociju i stvaranje uslova za jednako postupanje, što je osnovna pretpostavka autonomije ličnosti i njenog punog ostvarenja.

Zakonom o zabrani diskriminacije definisani su, pre svega, osnovni oblici diskriminacije i to neposredna i posredna diskriminacija, ali Zakon u članu 5. definiše i ostale oblike diskriminacije koji se mogu ispoljiti u vidu povrede načela jednakih prava i obaveza, pozivanja na odgovornost, udruživanja radi vršenja diskriminacije, govora mržnje, kao i uznemiravanja i ponižavajućeg postupanja.

Svaki pojedinac, shodno zakonskim odredbama, može se obratiti Povereniku za zaštitu ravnopravnosti u cilju zaštite svojih prava, odnosno zaštite od diskriminacije. Zakonom je omogućeno da se Povereniku građani obraćaju kako u pisanoj formi, tako i usmeno, a u oba slučaja podnosioci su oslobođeni plaćanja takse ili druge naknade. Na ovaj način, postojećim zakonskim rešenjima, građani se stimulišu da prijave akte diskriminacije, bez obzira na to o kom obliku diskriminacije je reč.

Kada je reč o nadležnostima koje ima institucija Poverenika za zaštitu ravnopravnosti, one obuhvataju različite sfere delovanja. Pre svega, osnovna funkcije ove institucije jeste postupanje po podnetim pritužbama. Za podnošenje pritužbe aktivno su legitimisane dve kategorije lica i to kako pojedinci koji smatraju da su lično diskriminisani, tako i organizacije koje se bave zaštitom ljudskih prava, ukoliko za to imaju saglasnost lica u čije ime se podnosi pritužba. Da bi Poverenik postupao u konkretnom slučaju, po podnetoj pritužbu neophodno je da se povodom zaštite prava u konkretnom slučaju nije vodio sudski postupak, odnosno da takav postupak nije u toku. Ukoliko utvrdi da je došlo do povrede prava na ravnopravnost, Poverenik upućuje preopruku da se odgovarajućim aktima učinjena povreda otkloni, odnosno da se otklone posledice učinjene diskriminacije. Ukoliko se po podnetoj preporuci ne postupi, Poverenik upućuje opomenu, a kao krajnje sredstvo na raspolaganju mu je i obaveštavanje javnosti o utvrđenim povredama, kao posebno sredstvo pritiska na izvršioca.

Poverenik je ovlašćen i da sprovede postupak medijacije, što je poseban oblik njegovog preventivnog delovanja.<sup>8</sup> Sa druge strane, potrebno je naglasiti da se institucija Poverenika može pojaviti i kao inicijator sudskog postupka, odnosno legitimisana je za podnošenje tužbe sudu ukoliko u toku svog postupanja utvrdi da ima osnova za vođenje sudskog postupka.

Poverenik ima i legislativna ovlašćenja, pa se može pojaviti kao inicijator donošenja propisa ili izmene postojećih propisa koji spadaju u sferu njegovog delovanja, a značajno je istaći da Poverenik komunicira i sa organima javne vlasti kao i da obaveštava javnost o učinjenim aktima diskriminacije, odnosno utvrđenim povredama ljudskih prava.

Analiza Zakona o zabrani diskriminacije upućuje na zaključak da su rešenja ovog zakona korespondentna sa međunarodnim pravnim aktima kojima je regulisana zaštita ljudskih prava i sloboda, a posebno prava na ravnopravnost kao jedne od osnovnih pretpostavki za potpuno ostvarivanje autonomije ličnosti. Do ovakvog zaključka se dolazi, pre svega, jer su zakonskim tekstom stvorene pretpostavke da se u pravni sistem uvede posebna institucija čiji bi osnovni zadatak bio da štiti građane od akata diskriminacije. Na ovaj način, institucija Poverenika za zaštitu ravnopravnosti ispunjava standarde postavljene u propisima, pre svega, Evropske unije, kojima se od država članica zahteva formiranje institucija čiji bi prevashodni zadatak bio eliminisanje svih oblika diskriminacije, odnosno pružanja adekvatne zaštite žrtvama diskriminacije.

### 5. Zaključak

Zašite od diskriminacije jedno je osnovnih pitanja u sferi zaštite ljudskih prava i sloboda, kako na nacionalnom, tako i na regionalnom i međunarodnom nivou. Ovaj značajan aspekt ostvarivanja autonomije ličnosti dobijao je na značaju sa sve većom normativnom delatnošću kojom su postavljeni međunarodni standardi u ovoj oblasti, a koji su implementirani u pojedinačne pravne sisteme. Na taj način stvoren je značajan korpus međunarodnih akata koji ne samo da su sve preciznije regulisali zabranu različitih oblika diskriminacije, već su paralelno stvarali i posebne, vansudske mehanizme, čija je delatnost usmerena postizanje pune ravnopravnosti između pojedinaca.

U tom smislu, značajna je uloga međunarodnih zaštitnih mehanizama u okvirima kako univerzalne organizacije Ujedinjenih nacija, tako i regionalnih institucija koje funkcionišu na evropskom kontinentu. Posebno je značajno naglasiti postojanje posebne evropske mreže koja okuplja institucije koje se potpuno ili delimično bave pitanjem zaštite od diskriminacije na nacionalnom nivou, a koja obuhvata ne samo države članice Evropske unije, već i ostale evropske države, pre svega države kandidati za članstvo u Evropskoj uniji. Na ovaj način, pitanje zaštite od diskriminacije dobija na značaju, jer se države na taj način ujedinjuju u rešavanju problema diskriminacije razmenom iskustava i stvaranjem istih ili sličnih mehanizama kojima je cilj postizanje pune ravnopravnosti između svih pojedinaca. Tome doprinose svakako i predlozi dve nove direktive kojima bi trebalo da se otklone uočeni nedostaci u radu institucija za zaštitu ravnopravnosti, odnosno da se obezbedi njihova uniformnost kako bi u svim državama bio ispunjen bar minimum standarda zaštite u ovoj oblasti.

Najveći značaj u borbi protiv diskriminacije imaju institucije koje funkcionišu na nacionalnom nivou. Kada je reč o Povereniku za zaštitu ravnopravnosti, kao mehanizmu koji funkcioniše u Republici Srbiji, ova institucija ima široko postavljene nadležnosti i u svom radu primenjuje kako domaće propise tako i međunarodne dokumente u oblasti borbe protiv diskriminacije, te je u njegov rad u velikoj meri već usklađen sa zahtevima i standardima koje bi trebalo da se uspostave u radu ovih institucija na evropskom nivou.

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Konvencija UN o ukidanju svih oblika diskriminacije žena

Evropska konvencija za zaštitu ljudskih prava i osnovnih sloboda

Predlog Direktive Evropskog parlamenta i Saveta o standardima za zaštitu ravnopravnosti u oblasti jednakog tretmana i jednakih mogućnosti muškaraca i žena u oblasti zapošljavanja i izbora profesije

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A688%3AFIN&qid=1670583897836>

Predlog Direktive Saveta o standardima za institucije za zaštitu ravnopravnosti o jednakom tretmanu pojedinaca nezavisno od njihove rasne ili etničke pripadnosti, jednakom tretmanu u oblasti zapošljavanja i profesije između pojedinaca nezavisno od njihove veroispovesti ili uverenja, invaliditeta, starosti ili seksualne orijentacije, jednakom tretmanu muškaraca i žena u oblasti socijalnog osiguranja i pristupu robama i uslugama

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022PC0689&qid=1686061002261>

Protokol br.12 uz Konvenciju za zaštitu ljudskih prava i osnovnih sloboda

Povelja o osnovnim pravima EU



# Leader as the Key to a Successful Project

## Лидер као кључ успешног пројекта

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### Abstract

Management by the leader within the implementation of the project has always been based on his personal as well as professional approach. One of the oldest approaches to describing project leaders is to attempt to group management activities by type and provide a framework to explain their activities. Often its importance in project implementation includes lists of what the leader should do within his engagement such as planning, organizing, motivating, controlling and developing.

This approach to the importance of leaders in projects is mostly uniform among numerous authors, so their essence is with elements of technicalism and some of them can be systematized around the agreed principles of "good practice". The "good practice" principles of project leadership are often the result of experience and research in the field. They provide guidelines and a framework for effective project management and team management, but it is important to be flexible and adapt them to the specific conditions and needs of each project.

*Keywords:* leader, leadership, project management, risks.

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### Резиме

Управљање којим се руководи лидер у оквиру реализације пројекта, се одувек заснивало на његовом личном као и професионалном приступу. Један од најстаријих приступа описивању лидера у пројекту је покушај груписања управљачких активности према врсти и пружање оквира за објашњење њихове активности. Често његов значај у реализацији пројекта укључују листе онога што лидер треба да ради у оквиру своје ангажованости као што је планирање, организовање, мотивисање, контролисање и развој.

Овакав приступ значају лидера у пројектима је углавном уједначен код бројних аутора, тако да је њихова суштина са елементима техницизма и неки од њих могу бити систематизовани око договорених принципа „добре праксе“. Принципи "добре праксе" лидерства у пројектима су често резултат искуства и истраживања у овој области. Они пружају смернице и оквир за ефикасно управљање пројектима и вођење тимова, али је важно имати флексибилност и прилагодити их конкретним условима и потребама сваког пројекта.

*Кључне речи:* лидер, лидерство, управљање пројектима, ризици.

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## 1. УВОД

Лидерство се односи на способност особе да инспирише и води друге ка постизању заједничких циљева. Лидер је појединац који има визију, препознаје прилике, доноси одлуке, мотивише и усмерава људе ка остварењу циљева. Лидерство обухвата различите стилове и приступе вођењу, а неки од најчешћих су ауторитарно лидерство, демократско лидерство и слободно лидерство<sup>1</sup>.

Ауторитарно лидерство карактерише централизовано доношење одлука, где лидер самостално доноси све одлуке и даје упутства запосленима. Овај стил лидерства може бити ефикасан у хитним ситуацијама или када је неопходна брза акција, али може отежавати мотивацију и ангажовање запослених.

Демократско лидерство подразумева укључивање запослених у процес доношења одлука и подржавање њиховог мишљења. Лидери који користе овај стил често подстичу сарадњу и тимски рад, што може резултирати већим задовољством и мотивацијом запослених.

Слободно лидерство подразумева минимално вођење и интервенцију лидера. Лидери који користе овај стил пружају запосленима слободу да самостално доносе одлуке и обављају своје задатке. Овај стил лидерства може бити ефикасан у тимовима са висококвалификованим члановима, али може довести до недостатка усмерености и координације.

Важно је напоменути да не постоји универзално "најбољи" стил лидерства, већ је избор стила лидерства зависи о контексту, ситуацији и особинама запослених. Успешни лидери често прилагођавају свој стил вођења у складу са потребама тима и организације.

Поред стилова лидерства, важни елементи лидерства су и способности као што су комуникација, делегирање, решавање проблема, мотивација и изградња односа. Лидери такође треба да буду визионари, да постављају јасне циљеве и да инспиришу људе да те циљеве постигну. Свакако, лидерство је способност појединца да инспирише, води и мотивише друге ка постизању заједничких циљева посебно кад асу у питању пројекти.

## 1. ЛИДЕР И ЛИДЕРСТВО

У данашње време лидерство је један од неизоставних фактора када се ради о успеху и одржању организације<sup>2</sup>. Узрок тога су промене у организационом окружењу које имају директан утицај и на промене у самој организацији. Те промене су настале услед глобализације и засићености тржишта. Према томе, сматра се да у оваквом окружењу може опстати само организација предвођена ефикасним лидерством које ће помоћи целокупној организацији да се суочи са свим изазовима, као и да имплементира промене на делотворан начин. Услед засићења на тржишту, од организација се очекује што већа продуктивност и увођење иновација како би се задовољиле потребе потрошача. У овом случају најважнију улогу имају лидери који морају бити спремни на све захтеве које тржиште захтева. Наиме, њихова одговорност је да уведу промене у сваком сегменту организације како би она функционисала на што ефикаснији начин<sup>3</sup>.

Постоји веома велики број дефиниција лидерства, а узрок тога је што оно представља тесно повезан однос између вође, његових следбеника и дате ситуације<sup>4</sup>. Лидерство се сматра способношћу појединца да изврши утицај на друге, у смислу мотивисања које касније доприноси већој ефикасности приликом извршења својих обавеза унутар организације<sup>5</sup>. Лидерство је, такође, дефинисано као процес који има утицај на остваривање одређених догађаја, одређивање циљева организације, затим организовање заједничких активности како би се ти циљеви реализовали, мотивисање следбеника, залагање за тимски рад за чије успешно реализовање је потребна сарадња свих чланова организације и пружање подршке унутар организације али и мотивисање на сарадњу са људима ван организације<sup>6</sup>. Лидерство представља процес унутар ког појединац мотивише групу на остварење заједничких циљева. Сам овај процес је дефинисан кроз четири чињенице о лидерству<sup>7</sup>:

- Лидерство се јавља унутар групе;
- Лидерство је процес;

<sup>1</sup> Manning, G., & Curtis, K. (2019). *The art of leadership*. McGraw-Hill Education.

<sup>2</sup> Day, D. V., Fleenor, J. W., Atwater, L. E., Sturm, R. E., & McKee, R. A. (2014). Advances in leader and leadership development: A review of 25 years of research and theory. *The leadership quarterly*, 25(1), 63-82.

<sup>3</sup> Ahn, M. J., Adamson, J. S., & Dornbusch, D. (2004). From leaders to leadership: Managing change. *Journal of leadership & organizational studies*, 10(4), 112-123.

<sup>4</sup> Bass, B. L. (2019). What is leadership?. *Leadership in Surgery*, 1-10.

<sup>5</sup> Den Hartog, D. N., House, R. J., Hanges, P. J., Ruiz-Quintanilla, S. A., Dorfman, P. W., Abdalla, I. A., ... & Zhou, J. (1999). Culture specific and cross-culturally generalizable implicit leadership theories: Are attributes of charismatic/transformational leadership universally endorsed?. *The leadership quarterly*, 10(2), 219-256.

<sup>6</sup> Portugal, E., & Yukl, G. (1994). Perspectives on environmental leadership. *The Leadership Quarterly*, 5(3-4), 271-276.

<sup>7</sup> Northouse, P. G. (2021). *Leadership: Theory and practice*. Sage publications.

- Лидерством се остварује утицај;
- Лидерством се долази до остварења циљева целе групе.

Важно је направити разлику између лидера и менаџера, често се ове две улоге поистовећују, а знатно су различите.<sup>8</sup> Лидер својим идејама инспирише и мотивише запослене, док је менаџер задужен за њихово контролисање при обављању посла и анализирање резултата истог. Међутим, несумњиво је да су и један и други неопходни унутар организације како би она ефикасно функционисала.

Закључићемо да су менаџмент и лидерство два међусобно зависна процеса, при чему лидерство представља део шире менаџерске активности. Једнако је могуће да лидер постане менаџер и обрнуто, али да би менаџер постао лидер он мора да стекне лидерске вештине кроз посебан програм развоја лидерства.

### 1.1. Лидер као носилац пројекта

Лидери своју свакодневну значајну улогу потврђују у оквиру организације. Пратећи ставове појединих аутора, као што су Каузес и Поснер, можемо уочити прецизну али и свеобухватну класификацију којој се одређује улога лидера<sup>9</sup>:

- којом изазивају прогресивне процесе, истовремено су спремни да се упусте у непознате сегменте, да подрже и препознају квалитетне идеје, спремни да прихвате изазов а да теже остварењу почетне идеје. На тај начин лидери подстичу иновационе процесе и прихватају иновације,
- којом се инспирише визија коју лидери поседују и развијају са ентузијазмом, а истовремено предузима активности којима подржава сараднике и инспирише на остварење визије,
- омогућавају другима да кроз тимски рад делују у смеру остварења почетне визије, а кроз свој пример активности даје помоћ и подршку остварању дефинисаног пројекта.

Свакако општа суштина улоге коју има лидер јесте да као тимски вођа даје смернице, координира и повезује све чланове тима, при чему ствара атмосферу заједништва и пружа мотивацију у остварењу тимског задатка.

Пословна теорија и пракса различито дефинишу пројектног лидера. Према неким ауторима то је вођа пројекта који као професионалац води људе и осигурава да се пројекат спроведе<sup>10</sup>. На тај начин вођа пројекта ангажује тим, мотивише их, брине о њиховим потребама и одржава пријатељско и продуктивно радно окружење. Други аутори у први план код дефинисања пројектног лидера истичу њихову одговорност која укључују<sup>11</sup>:

- Присуствовање састанцима са другим лидерима;
- Израда извештаја о напретку у вези са пројектима на којима раде,
- Одржавање фокуса тима на пројекту и кретање ка постизању циља,
- Тестирање прототипова производа.

Послови и пројекти који се воде су уз то разнолики, па би сваки сектор основној дефиницији понешто додао, понешто одузео, понешто променио.

Можда највише забуне у дефинисању појма пројектни лидер уносе сродни појмови, као што су пројектни менаџер и тим лидер, између осталих. Због тога ћемо и ми приликом покушаја дефинисања једног свеобухватног појма пројектни лидер поћи од ових разлика.

Прво ћемо анализирати појам пројектни лидер у односу на пројектни менаџмент, а затим појам пројектни лидер у односу на тим менаџмент. Основна обележја која ћемо поредити су улоге које ова лица имају на пројекту и особине и вештине које су им потребне а њихово успешно обављање. Из разлога што смо нашом анализом установили да ту леже кључне разлике. Осим тога, такав приступ нам се чини обухватним, будући да у обзир узима објективне (улоге) и субјективне (способности и вештине) критеријуме.

Већ из самих назива јасно је откуда почиње забунa у разграничавању ова два појма. Наиме, лидер и менаџер су у ширем смислу вође, организатори, они који носе одговорност да извршење пројекта прати свој планирани ток. Ипак, на том истом језичком плану се и уочава основна разлика међу овим појмовима, а следствено и улогама које ова лица имају на пројекту.

Лидер би се тако могао посматрати као шири и општији појам, који би под своје поље дефинисања могао да обухвати више општих одредница, док је код менаџера фокус на техничком, организационим аспектима вођења

<sup>8</sup> Ahn, M. J., Adamson, J. S., & Dornbusch, D. (2004). From leaders to leadership: Managing change. *Journal of leadership & organizational studies*, 10(4), 112-123.

<sup>9</sup> Kouzes, T. K., & Posner, B. Z. (2019). Influence of managers' mindset on leadership behavior. *Leadership & Organization Development Journal*, 892-844

<sup>10</sup> Sankaran, S., Müller, R., & Drouin, N. (2020). Investigating collaboration in project management research: using action research as a meta-methodology. *International Journal of Managing Projects in Business*, 14(1), 205-230.

<sup>11</sup> Englund, R., & Graham, R. J. (2019). *Creating an environment for successful projects*. Berrett-Koehler Publishers.

пројекта. Граница није толико крута, и често у пракси обе улоге може обављати иста особа, или једна може мењати другу привремено и по потреби.

Упркос овој резерви, за ефикасно управљање пројектном важно је уочити разлику, доделити улоге појединцима који ће се у њима најбоље снаћи, који за њихово обвљање поседују специфичне особине и вештине.

Нека предузећа користе термине наизменично. Међутим, лидер пројекта обично има више контроле над пројектом и више слободе да истражује сопствене стилове управљања него менаџер пројекта. Постоје критичне, али суптилне разлике између ових позиција. Основне разлике у лидерству пројекта и управљању пројектом су<sup>12</sup>:

- Вође пројектата су визионари, док су пројектни менаџери координатори
- Пројектни менаџери су фокусирани на координацију пројекта. Лидери пројекта, с друге стране, одговорни су за укупан успех и визију тог пројекта. Њихова визија треба да усмерава остале запослене у томе шта и како треба да раде.
- Менаџери пројектата су фокусирани на пројекте, док су лидери пројектата усредсређени на људе
- Менаџери пројекта су одговорни за тактике које стварају крајњи резултат — успешан пројекат. Њихова брига је да осигурају да тим испуни циљеве на време и да пројекат остане у оквиру буџета. Лидери пројекта се фокусирају на управљање пројектом док инспиришу оне који раде око њих да креирају своју визију.
- Вође пројектата размишљају док пројект менаџери извршавају.
- Менаџери пројектата имају нацрт шта треба да ураде. Менаџери пројекта управљају буџетом, особљем и одговорностима чланова тима како би осигурали да се рокови поштују. Док вође пројектата такође управљају ефективношћу тима, њихова стратегија је да мотивишу и помогну у стварању нових идеја за постизање циљева.
- Менаџери пројектата су оријентисани на резултате, док лидери пројектата раде на учењу
- Примарни циљ пројект менаџера је да пројекат заврши у предвиђеном року И у оквиру наведеног буџета. Лидери пројектата такође желе те циљеве, али такође идентификују начине да прилагоде свој стил управљања тимовима. Они настоје да идентификују начине за повећање ефикасности тима и стога постављају амбициозне тимске циљеве.

## 2. ВЕШТИНЕ ЛИДЕРА КАО ОДГОВОР НА РИЗИКЕ ПРОЈЕКТА

Лидер игра виталну улогу у успеху пројекта и управљању пројектима. Кључне су неколико карактеристике и вештине које треба да има лидер да би пројекат успешно водио<sup>13</sup>:

- Комуникација: Лидер треба да буде добар комуникатор и да може ефективно да комуницира са свим члановима тима, клијентима и другим заинтересованим странама. Одлична комуникација помаже у јасном изражавању циљева, очекивања и улога у тиму.
- Планирање: Лидер мора бити добро организован и вешт у планирању. Он треба да има преглед свих активности пројекта, да разуме редослед и зависности задатака и да изради реалистичан план.
- Управљање конфликтима: Конфликти су неизбежни у било којем пројекту. Лидер треба да буде способан да ефективно управља конфликтима и да помаже у решавању сукоба између чланова тима. Ова вештина је од великог значаја за одржавање хармоничног и продуктивног радног окружења.
- Мотивација: Лидер треба да буде способан да мотивише свој тим и да инспирише чланове да дају свој најбољи допринос пројекту. Овај аспект укључује похвалу постигнућа, пружање појединачне и тимске подршке и стварање позитивне радне атмосфере.
- Управљање ризицима: Лидер треба да буде способан да идентификује, анализира и управља ризицима у пројекту. Сама реализација пројекта, без обзира на адекватност и систематичност планирања, носи бројне ризике реализације па је самим тим улога лидера веома зналајна у домену идентификације таквих ризика. Лидер у таквој позицији треба да буде способан да проактивно идентификује потенцијалне ризике који могу утицати на успешно завршавање пројекта. Ова процес укључује проналажење и прикупљање информација од тима, стручњака и других заинтересованих страна. Све то подразумева једу системску аналитичку димензију способности лидера, који треба да буде способан да анализира и процењује ризике по њиховом утицају и вероватноћи настанка. Ово помаже у раном откривању и приоритизацији ризика који захтевају пажњу и превентивне активности.

Планирање активности, које спроводи и прати лидер пројекта самим тим поприма и улог планирања ризика, а паралелно са тим и мере које ће се применити за управљање ризицима. Ово може укључивати дефинисање контингенцијских планова, развој стратегија за минимизирање ризика и усмеравање ресурса на ризике са највећим

<sup>12</sup> Scott-Young, C. M., Georgy, M., & Grisinger, A. (2019). Shared leadership in project teams: An integrative multi-level conceptual model and research agenda. *International Journal of Project Management*, 37(4), 565-581.

<sup>13</sup> Thomas, G., Martin, R., & Riggio, R. E. (2013). Leading groups: Leadership as a group process. *Group Processes & Intergroup Relations*, 16(1), 3-16.

потенцијалом за штету<sup>14</sup>. Директно праћење и контрола од стране лидера током пројекта подразумева и да примењује контролне механизме. Ово укључује редовно прегледање статуса ризика, ажурирање ризичног регистра и примену корективних мера када је потребно.

Посебно значајна улога лидера јесте развој тимске свести, коју пре свега може да обезбеди у свом тиму ако обезбеди адекватну обуку и информисање. Ово може укључивати обуку о методологијама управљања пројектима, ризицима, процесима и алатима које тим користи. Лидер својим комуникативним већинама треба да стимулише дијалог у тиму о и да посвети време да разговара са члановима тима о њиховим мишљењима и предлозима за идентификацију и управљање пројектом и ризицима. Ово помаже у стварању свесности и разумевању ризика унутар тима.

Поред тога лидер треба да интегрише управљање ризицима у свакодневне радне процесе тима. Ово може укључивати укључивање ризичне анализе и планирања ризика у процесе планирања и извршавања задатака, као и редовно ажурирање ризичног регистра<sup>15</sup>. Не треба заборавити да лидер мора бити спреман и треба да пружи подршку и похвалу члановима тима који активно учествују у идентификацији и управљању ризицима. Ово посебно важи за промоцију проактивности и иновативности у односу на управљање ризицима.

Лидер треба да буде проактиван у идентификацији и управљању ризицима. То значи да треба да буде први који посвећује пажњу ризицима, препознаје их и предузима мере пре него што постану проблеми. Проактивност лидера ће навести и остале чланове тима да га прате као пример.

## 2.1. Лидерска улога учачавања ризика и успешност пројекта

Мерење успешности пројекта је важан процес који омогућава процену постигнутих резултата у односу на циљеве пројекта. Овај процес укључује квантификацију и анализу достигнућа пројекта како би се утврдило да ли је пројекат испунио постављене циљеве и очекивања. Само мерење успешности пројекта заснива се на мерењу које се компаративно поставља у односу на постављене циљеве. Дефинисање јасних и мерљивих циљева пројекта односи се пре свега да сваки циљ треба бити описан на начин који омогућава квантификацију успеха. Ове значајну улогу има идентификација кључних перформансијских индикатора који ће помоћи мерење напредак и успех у постизању циљева пројекта<sup>16</sup>. Самим тим идентификација кључних перформансијских индикатора је мерљива величина које омогућава праћење кључних аспеката пројекта. То подразумева редовно праћење и мерење релевантних идентификација кључних перформансијских индикатора током трајања пројекта. То може укључивати вођење евиденције, употребу софтвера за управљање пројектима или анализу података, гд еје неопходно сакупљање и ажурирања података како би имали тачан увид у напредак пројекта. Ова анализа и тумачење резултата на основу прикупљених података и тумачења резултата у контексту постављених циљева. Упоређивање стварних резултата са циљевима врши се идентификујућа евентуалних разлика или одступања, као и ризика који се постављају у оквиру самог пројекта. Ова анализа помаже да се разуме шта је допринело или спречило постизање циљева, као и који су ти ризици који су имали утицај на сам ток пројекта и њену потпуну реализацију.

Како би се остварило континуирано побољшање реализације пројекта и тиме адекватно вршило даље мерење успешности, одговорност лидер долази до посебног утицаја при чему он треба да преузме одговорност за управљање ризицима који су довели у пројекту. Тада чидер треба да буде отворен за колаборацију са осталим члановима тима у вези са ризицима, када поддрже даље дијалоге, што укључује слушање и узимање у обзир мишљења и предлога других чланова тима<sup>17</sup>. Комуникација треба да буде јасна, приступачна и инспиративна, са нагласком на значај и допринос сваког члана тима у пројекту. На тај начин лидер треба да буде спреман на константно учење и усавршавање у вези са управљањем пројектом.

## ЗАКЉУЧАК

Управљачке способности се могу дефинисати као одређени атрибути или способности које руководилац треба да поседује да би испунио специфичне задатке у организацији, што се посебно може односити на лидерску позицију у оквиру реализације датих пројеката. Оне обухватају капацитет за обављање извршних дужности у организацији уз избегавање кризних ситуација и брзо решавање проблема када се појаве. Управљачке вештине се могу развити

<sup>14</sup> Thomas, G., Martin, R., & Riggio, R. E. (2013). Leading groups: Leadership as a group process. *Group Processes & Intergroup Relations*, 16(1), 3-16.

<sup>15</sup> Ahn, M. J., Adamson, J. S., & Dornbusch, D. (2004). From leaders to leadership: Managing change. *Journal of leadership & organizational studies*, 10(4), 112-123..

<sup>16</sup> Curran, C. S., Niedergassel, B., Picker, S., & Leker, J. (2009). Project leadership skills in cooperative projects. *Management Research News*, 32(5), 458-468.

<sup>17</sup> Pilkienė, M., Alonderienė, R., Chmieliauskas, A., Šimkonis, S., & Müller, R. (2018). The governance of horizontal leadership in projects. *International Journal of Project Management*, 36(7), 913-924.

кроз учење и практично искуство лидера коме припада посебна управљачка улога. Вештине му на тај начин помажу да се повеже са својим колегама и да остваре позитивне исходе реализације пројектних задатака.

Саморазвој и самоевалуација играју важну улогу у развоју лидера, а то значи да лидер треба да редовно прегледа своје стилове управљања и своје јаче и слабије тачке у вези са управљањем пројектима. Ово може укључивати самоанализу, упитнике о личности или ослушкивање повратних информација од колега и подређених. Преко овакве самоевалуације, лидер може идентификовати области које су му неопходне за даљи лични развој као вође пројекта.

Лидер треба да посвећује време и ресурсе за стално учење у вези са управљањем пројектима. Ово може укључивати читање стручне литературе, потрагу за новим трендовима и истраживања у овој области, присуствовањ семинарима и конференцијама, а примена нових знања и вештина може се остваривати кроз тренинге и вежбе.

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## Education for the Future of the Company

### Образовање за будућност предузећа

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#### Abstract

Education and training help employees achieve their goals by providing them with the education they need not only to do their jobs better, but also to learn about new aspects of business and even higher-level management skills that they can use in their professional development. When we look at training and education itself in this way, it should be understood as a socially acceptable investment by which employers invest in their workforce. When companies offer training and education to their employees, they show that they value people and the contributions they make. They also send a message that the organization values progress - both in organizational achievements and in the careers of its people. Of course, this creates attachment, loyalty and enthusiasm among employees. Having low self-worth can lead to people feeling low, lacking potential, or struggling to manage relationships with colleagues. However, too high levels of self-worth can lead to an inability to learn from experience, including, most importantly, from failure.

*Keywords:* Education, employee training, motivation, reducing resources, company development.

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#### Резиме

Образовање и обука помажу запосленима да остваре своје циљеве пружајући им едукацију која им је потребно не само да би боље обављали свој посао већ и да уче о новим аспектима пословања и чак менаџерским вештинама вишег нивоа које могу користити у свом професионалном развоју. Када на овакав начин посматрамо саму обуку и образовање треба схватити као друштвено прихватљиву инвестицију којом послодавци улажу у своју радну снагу. Када компаније нуде обуку и образовање својим запосленима, показују да цене људе и доприносе који дају. Такође шаљу поруку да организација цени напредак - како у организационим достигнућима, тако и у каријери својих људи. Наравно, то ствара приврженост, оданост и ентузијазам међу запосленима. Поседовање ниске вредности само себи може довести до лошег расположења људи, недостатка потенцијала или борбе за управљање везама са колегама. Међутим, превисоки нивои сопствене вредности могу довести до немогућности учења из искуства, укључујући, што је најважније, и од неуспеха.

*Кључне речи:* образовање, обука запослених, мотивација, ресурси предузећа, развој предузећа

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## 1. УВОД

Запоселни, као радна снага сваког предузећа, у оквиру своји основних радних обавеза, може да оствари додатне обуке и образовања, која се према потребама предузећа али и личне мотивације могу реализовати на адекватан начин.

Закон о раду који прати радне односе предвиђа да се у оквиру уговора о раду, запосленом пружа могућност да се у сфери додатног образовања оствари у радној средини. Што му може на неки начин дати додатну мотивацију у реализацији радних задатака али му се истовремено пружа могућност напредовања. Запослени који се баве својим пословима и каријером желе да знају више и науче додатне вештине које ће побољшати њихов рад. Послодавци који желе да искористе пуну вредност својих запослених и да подстакну лојалност и задржавање запослених свакако треба да подрже овакве иницијативе, али и да их сами организују и спроводе на обострано задовољство. Када се сагледа тренутна слика на глобалном пословном плану, уочава се тенденција да компаније и предузећа све више улажу новац у образовање својих запослених. Сама обука и образовање запослених треба схватити као комплексну категорију и процес у коме се морају испунити бројни захтеви, како би се на што квалитетнији начин остварило право запослених у домену стицања или проширивања сазнајног хоризонта у својој професији.

## 2. ДРУШТВЕНА УСЛОВЉЕНОСТ ОБУКЕ И ОБРАЗОВАЊА

Сваки запослени доприноси укупној функцији организације која послује у оквиру одређеног друштва. На тај начин има могућност да утиче на различите друштвене сфере на начин који може да унапреди развој друштвених и производних односа. Складност између друштвеног развоја и развоја запослених могуће је остварити системом обуке и образовања којим се пружа шанса запосленом из радног односа да унапреди друштвена кретања (Обрадовић, Арсић, 2013).

Обука може помоћи запосленима да разумеју како се њихов рад уклапа у структуру, мисију, циљеве и достигнућа развоја друштва и предузећа у коме ради. Као резултат тога, запослени могу постати мотивисанији и продуктивнији због свог рада када разумеју како је оно што им је важно за успех организације. Запослени често знају или су понекад упућенији од управљачке структуре када би њихов рад, процеси или продуктивност могли бити бољи. У многим случајевима запосленима недостају алати, образовање или организација како би остварили свој потенцијал. Обука која је посебно значајна за одељења, радне групе и тимове - може помоћи да се ствари поставе на путу како би се побољшали квалитет рада и резултати.

Као резултат тога, људи се осећају срећнијим у свом послу и више узбуђени изгледима за успех. Многи радници се придружују својим организацијама не само да би имали посао него да би развили каријеру. Прилике за напредовање су кључне за задржавање и рад запосленика. Међутим, ако ове перспективе постоје само у теорији, радници могу бити онемогућени, а самим тим и читав друштвени процес успорен у свом развоју, што повлачи далекосежне последице.

### 2.1. Ресурси предузећа као подршка образовању

У пословном смислу, управљање спектром вредности сопствене вредности је вештина сама по себи. Ефикасни линијски менаџери и вође тима користе ресурсе своје организације да успоставе равнотежу продуктивних нивоа самопоуздања запослених. Пре него што послодавци могу да донесу одлуке у вези са вођењем, обуком, улагањима у особље и запослене, морају да верују да је побољшање самовредности запослених драгоценост (Scaduto, Lindsay, Chiaburu, 2008).

Ово веровање може проizaћи из различитих извора. Пре него што процене трошкове обуке, менаџери се морају запитати, да ли ће обука и развој довести до успеха и да ли ће побољшати рад појединца, а из етичке перспективе, одговор на та питања у целини се односи у потврдном смислу. Међутим, време и трошкови развоја обуке, мотивисања запослених кроз олакшавање и фокусирање на лични развој могу створити помак. Запослени могу развити ниску вредност кроз појачане осећаје неадекватности и негативних разговора или поступака. Може се догодити зачарани круг који може изаћи из контроле ако га сами или други оставе под контролом.

Руководиоци на свим нивоима управљања одговорни су да обезбеде да њихова радна снага не пати од слабе вредности, посебно имајући у виду да њихови осећаји могу утицати на њихове радње на послу. Посао препун људи жељних учења и развоја сигуран је знак да је компанија добро запослила или има способност мотивисања и развоја запослених. Постизање овог окружења није тако лако као што звучи, али ова инвестиција у запослене може искористити пуну вредност радне снаге, промовишући лојалност и задржавање (Mukminin, Semmaila, Ramlawati, 2020).

Разумевање и мотивисање запослених кључ је повећања самовредности на радном месту. Обука може да помогне запосленима да разумеју како се њихов рад уклапа у структуру, мисију и циљеве предузећа али и друштва у целини. Запослени често постају мотивисанији када схвате како им је посао важан. Међутим, обука за основне вештине можда није исто што и мотивацијски тренинг. Запослени често знају или су бољи од својих управљача и



руководиоца када су њихови радни процеси или продуктивност бољи. У многим случајевима им недостаје алат или образовање да би постигли свој потенцијал.

Обука, посебно за одељења и тимове, може побољшати квалитет рада и резултате. Као резултат тога, запослени се осећају срећнијим у свом послу, постају узбуђенији због могућности успеха и развијају већу самовредност. Могућности за обуку и развој треба посматрати као улагање у виталне људске ресурсе (Rašković, 2010). Када компаније нуде обуку својим запосленима, морају се сетити важности приказивања вредности коју њихови људи имају. Јасно демонстрирање планирања обуке, посвећеност обуци и развоју и дугорочна посвећеност напредовању у каријери запослених је од виталног значаја. Развијањем сопствене вредности запослених може се промовисати везаност, оданост и ентузијазам (Mukminin, Semmaila, Ramlawati, 2020). Такође би већина запослених требало да структурира своје учење и развој тако да испуњава организационе потребе. Као резултат тога, организација развија идеалну атмосферу за учење и раст, а могуће је пратити утицај обуке на перформансе запослених.

Постоје различити фактори као што су обука, мотивација, технологија, понашање менаџмента, радно окружење, где сваки фактор доприноси укупном учинку запосленика. Фактори који највише доприносе су они који имају релативан значај који дају запослени. Свакако обука у великој мери доприноси успешности запосленика у поређењу са другим факторима попут мотивације, технологије, понашања менаџмента, радног окружења (Kuswati, 2020).

Постоји позитивна веза између радног учинка и обуке и мотивације и имају позитиван утицај на рад запослених. Организација која има добре планове обуке за запослене може побољшати рад запослених. Све организације које желе да побољшају своје запослене треба да се фокусирају на обуку јер такође мотивишу запослене да постигну веће нивое перформанси.

## 2.2. образовање као теоријска и системска категорија

Сваки послодавца треба да постане свестан да улагање у континуитету у оквиру запослених путе обука и образовања утиче на развој запослених, који могу да пруже већу продуктивност у радном процесу. Међутим, оно што чини суштину оваквих акција јесте да оне морају бити плански остварене, што прати системски приступ у дизајнирању, пласирању и имплементацији реализације одређене обуке или образовања (Бабић 2009). На тај начин схваћена обука се може посматрати и као посебна наука која показује прави и погрешан начин у пројектовању и спровођењу програма обуке. Адекватно планирана и припремљена обука важна је колико и континуитет у учењу. Обука постаје све присутнија и актуелнија метода којом се побољшава продуктивност запосленог, повећавају његове организационе перформансе, али и постиже циљано остварење његових права из радног односа. У таквом сагледавању суштине образовања и обуке запослених, веома важну улогу има приступ обуци који је системски. Овај приступ, се базира на идеји да је дата обука испланирана, како би задовољила све потребе послодавца и запослених, као и обостраних обавеза (Kuswati, 2020). Овакве активности су пре свега у функцији развоја а у циљу постизања специфичне стручности, која може да иницира промене у знању, ставовима и вештинама а тиме и да побољша и доведе до значајних промена у радном процесу и окружењу. Оваква усмереност може довести и до задовољства самим послом, као и осећаја поштовања права запосленог у делу пружања шансе за напредовањем. Остварење системског циља обуке и образовања поразумева поједине приступне кораке као што су сама процена реалних потреба у смислу захтева запослених, одређење посебних циљева којим се креће развој предузећа, бирање метода и приступа обуке, као и припрема самог програма (Salas, et. al. 2012).

Кораци који су неопходни у реализацији обуке су међусобно повезани а њихова фазна структура приказана је у табели 1.

Табела 1. Кораци и фазе обуке запослених

Фазе обуке	Активности обуке	Услови обуке и валидност
пре	Анализа образовних потреба: <ul style="list-style-type: none"> <li>- Потреба предузећа</li> <li>- Потреба конкретног посла</li> <li>- Индивидуална потреба запосленог</li> </ul>	Адекватан распоред обуке Обавештеност запослених и руководиоца
током	Формирање процеса размишљања код запосленог <ul style="list-style-type: none"> <li>- Самовредновање и ефикасност</li> <li>- Усмереност према учењу</li> <li>- Развој и подстицање мотивације</li> </ul>	Образовни принципи Стратегија извођења обуке Услови за спровођење и стратегија обуке

после	Преношење знања из обуке - Подстицај праксе - Обезбеђивање средстава за даљи рад - Усмеравање и подстицај упуствима	Јасна оцена спроведен обуке Усмереност на обуку вишег нивоа Повезаност са практичним потребама
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(Извор: Salas, et. al. 2012)

Како би обука била остварена у свом максимуму, није довољна само анализа потребе саинтересованих субјеката, већ је неопходно обезбедити и потребе услове као и концепт реализације. У ту сврху се често истиче да је потребно запослене упутити на њихову евентулану обавезу, потребу али и права која им следују у радном односу, у смислу да ни у једном тренутку не могу бити ускраћена њихова права на додатно образовање и обуку из радног односа.

### 3. АНАЛИЗА ПОТРЕБЕ И ЦИЉЕВА ПРЕДУЗЕЋА ЗА ОБРАЗОВАЊЕМ ЗАПОСЛЕНИХ

Обука и развој могу убрзати анализу и планирање предузећа, почевши од послодавца који треба да преиспита своје тренутне али и будуће потребе, чиме своје интерне процене поставља у односу на могућност раста и развоја, предузећа али и запослених.

Предузеће које се одмах укључе у раст запослених и потенцијалне могућности учења, од тренутка кад се појединач запосли, моће ће великој мери да утиче на будуће перформансе и посвећеност запослених. Извештај о учењу на радном месту за 2017. коју су анализирали преко 500 стручњака за учење и развој широм Канаде и САД открило је да 80% руководиоца верује да је развој запослених главни приоритет, и извештајем је такође утврђено да се 90% руководиоца слаже да постоји недостатак вештина радне снаге у САД а тај проблем обука и развој могу у великој мери премостити (Ozkeser, 2019).

Постоје неке основне смернице које треба поштовати у контексту анализе потребе за обуком и образовањем које се тичу послодавца али и запослених (Перић, 2008):

- 1) Циљанје посебних вештина запослених - учењу на радном месту преко обуке за овладавањепосебним вештинама треба да буде приоритет јер се тиме омогућава запосленом да се активно укључи у овладавању посебним пословима које ће бити у корак са развојем самог предузећа, што ће му омогућити задржавање запослења и могућност напредовања;
- 2) Персонализујте развој запослених - раније су програми обуке приступали развоју по општим принципима радног места, али се ова техника показала неадекватном јер се запослени морају анализирати и препознати у смислу њихових специфичних вештина, технолошког напретка и приступа учењу.
- 3) Дигитално учење - обезбеђивање запосленима могућност да се дигитално образују и своје вештине и нова знања да стичу и на основу савременог начина едукације. Обука треба да се одвија путем више платформи, да буде динамична у својој приступачности, персонализована и да нуди сталну подршку.
- 4) Анализа стратешког план развоја свих субјеката едукације - послодавци морају да преузму иницијативу у подучавању и надограђивању запослених, а кораци у стварању развојног плана започињу утврђивањем пословних циљева и индивидуалних потреба и интересовања. Сам развојни план мора да укључи различите фазе за ефикасно праћење, које анализира пре, током и после остварене едукације.

#### 3.1. Модел образовања за будућност предузећа

Обука је део посебног подсистерило које предзеће треба да развије како би остварило свују пуну усаглашеност са обавезама које има према закону о раду али и правима које има запослени. Развој сопствених модела зависе од трансформационог процеса који захтева извесна посебна улагања у запослене, где се заузврат остварују додатне вештине, знања и способност запослених да одговоре задацима унутар предузећа.

Постоје три модела обуке (Diamantidis, Chatzoglou, 2019):

- Модел система
- Прелазни модел
- Модел развоја инструктивног система

Када је у питању обука за системски модел он се састоји од пет фаза,које се редовно понављају да би се постигло побољшање. Обука треба да постигне сврху помагања запосленима да свој посао обављају према траженим стандардима. Кораци укључени у системски модел обуке су следећи (Shakib, 2021):

1. *Анализа и идентификација*: Анализирати и идентификовати потребе за обуком, тј. анализирати одељење, посао, потребе запослених, коме треба обука, шта треба да науче, процењујући трошкове обуке, итд. Следећи корак је развијање мере успешности на основу које ће бити остварен стварни учинак би били оцењени.

2. *Дизајн* : Дизајнирајте и обезбедите обуку у складу са идентификованим потребама. Овај корак захтева развијање циљева обуке, идентификовање корака учења, редоследа и структурирање садржаја.

3. *Развој* : Ова фаза захтева пописивање активности у програму обуке које ће помоћи учесницима да науче, одабир начина пласирања и испитивања материјала за обуку и потврђивање информација које ће се пренети како би били сигурни да испуњава све циљеве.

4. *Имплементација* : Имплементација је најтежи део система јер један погрешан корак може довести до неуспеха целог програма обуке.

5. *Процена*: Процена сваке фазе како би се осигурало да је постигла свој циљ у погледу накнадног радног учинка. Уношење неопходних измена у било коју од претходних фаза у циљу отклањања или побољшања пракси и евентуалних грешака у обуци.

Прелазни модел се фокусира на организацију у целини. Спољашна веза описује визију, мисију и вредности организације на основу којег се извршава модел тренинга тј. унутрашња веза и визија. То се усредсређује на прекретнице које предузеће жели да постигне након дефинисаног временског периода. Изјава о визији говори о томе где се предузеће види неколико година касије. Визија може укључивати постављање узора или увођење унутрашње трансформације или испуњавање неких других рокова (Zahra, Iram, Naeem, 2014). Разлог за израду изјаве о мисији је мотивисање, надахнуће и информисање запослених о предузећу. Изјава о мисији говори о томе како би предузеће желело да посматра своје запослене и све остале заинтересоване стране.

Вредности моделоване обуке се одражава дубоко исказујући вредност предузећа и независна је од тренутног пословног окружења. На пример, вредности могу укључивати друштвену одговорност, извршну услугу за кориснике итд. Мисија, визија и вредности претходе циљу у унутрашњој мотивационој снази запослених да остваре своје право из радног односа. Овај модел сагледава предузеће као целину.

Трећи модел развоја инструктивног система направљен је да одговори на проблеме обуке. Овај модел се данас широко користи у предузећима јер се бави потребом за обуком у вези са конкретним послом. Циљеви обуке су дефинисани на основу одговорности у раду и описа послова, а на основу дефинисаних циљева мери се напредак појединца.

Овај модел такође помаже у одређивању и развоју повољних стратегија, секвенцирању садржаја и пружању медија за врсте циљева обуке које треба постићи. Модел развоја инструктивног система састоји се од пет фаза (Zahra, Iram, Naeem, 2014):

- *Анализа* : ова фаза се састоји од процене потреба за обуком, анализе посла и анализе циљне публике.
- *Планирање* : ова фаза се састоји од постављања циља исхода учења, наставних циљева који мере понашање учесника након обуке, врсте материјала за обуку, одабира медија, метода оцењивања полазника, тренера и програма обуке, стратегије за пренос знања, односно одабира садржаја, редоследа садржаја итд.
- *Развој* : ова фаза преводи дизајнерске одлуке у материјал за обуку. Састоји се од развијања курсева за тренере, укључујући брошуре, радне свеске, визуелна помагала, показне реквизите, где програмски материјал за полазника, укључујући различите приручнике.
- *Извршење* : ова фаза се фокусира на логистичке аранжмане, попут уређења звучника, опреме, клупа, подијума, објеката за хлађење, хлађења, осветљења, паркирања и осталог прибора за обуку.
- *Процена* : сврха ове фазе је осигурати да је програм обуке постигао свој циљ у смислу накнадног радног учинка. Ова фаза се састоји од идентификације јаких и слабих страна и увођења потребних измена у било коју од претходних фаза у циљу отклањања или побољшања праксе неуспеха.

## ЗАКЉУЧАК

Образовање има кључну улогу у припреми будућих генерација за изазове који их очекују у пословним окружењима. Како би се предусрели променама и осигурало успешно пословање, компаније морају улагати у образовање својих запослених, али и у образовне програме који припремају нове таленте за будуће послове. Кључни аспект образовања за будућност предузећа су пре свега технолошко образовање јер предузећа се суочавају са потребом за дигиталном трансформацијом. образовање у областима као што су вештачка интелигенција, аналитика података, машинско учење, интернет ствари и блокчејн постаје неопходно за предузећа како би стекла конкурентске предности и иновирала своје пословне процесе.

Поред техничких вештина, комуникационе вештине постају све важније у пословном свету. Комуникацијске вештине дају ремел тимском раду, развоју лидерства, креативности и решавању проблема. Све је то кључно јер помаже предузећима да се прилагоде променама, развијају продуктивне тимове и одржавају иновативно окружење. Поред осталог, менаџмент Брзе промене на тржишту рада могу резултирати потребом за преквалификацијом и преусмеравањем запослених. Предузећа треба да подрже своје запослене пружајући им прилике за усавршавање и преквалификацију како би се прилагодили новим захтевима посла и задржали релевантност у својим индустријама.

Образовање не сме бити ограничено само на формално образовање или унутрашње обуке. Предузећа треба да подстичу културу учења током целог живота, где запослени имају приступ континуираном образовању путем

онлине курсева, менторских програма, конференција и других ресурса. Ово помаже запосленима да остану ажурирани с најновијим трендовима и развију своје вештине током каријере.

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# Authentic Leadership and Its Relationship with Perceived Leadership Efficacy: The Mediator Role of Extrinsic Regulation - Material

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## Abstract

The objective of this article was to critically examine the mediating role that extrinsic regulation material plays between authentic leadership and perceived leadership efficacy. Authentic leadership has been the subject of research by various authors and has been practically applied for the last two decades. It is recognized as a positive leadership style with good results in conditions of increasing uncertainty, ruthless competition, globalization, and increasing crises in various critical fields. The empirical study utilized primary data from a random sample of 262 participants working in private and state-owned organizations in Serbia. Descriptive statistics, direct and indirect path analysis and the Mann-Whitney U test were used to statistically analyze the collected data. The results revealed a statistically significant positive relationship between authentic leadership and perceived leadership efficacy, which are both directly connected and indirectly interconnected with extrinsic regulation material. It was also found that the effects of authentic leadership varied depending on the type of business ownership. All things considered, this research presented new and significant results because it relied solely on mediation analysis of three important variables which were integrated into one model. In addition, the study's findings contributed significantly to understanding the state of authentic leadership in Serbia. The results of this research, if implemented, will be useful for organizations and employees in Serbia.

*Keywords:* authentic leadership, extrinsic regulation material, perceived leadership efficacy, competition

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## 1. Introduction

Leadership has occupied the attention of scientists, practitioners, and all aspects of human life since the beginning of the last century until today. The continuum of the study and application of different leadership styles has ranged from the approach of personal traits, behavioural and situational, up to modern approaches, because of the growing interest in the topic as well as the appearance of several factors (mostly external) that have necessitated the revision or emergence of new leadership styles. The reason for the great attention paid to leadership lies in the fact that it has been directed that 45% of the organizational performance directly depends on the effectiveness of the leadership team (Guterman, 2023:2). The latest research also shows that leadership skills (70%) and successful planning (51%) are crucial for human capital (Behbani, N., 2023, [www.linkedin.com/company/stanton-chase-international/?originalSubdomain=rs](https://www.linkedin.com/company/stanton-chase-international/?originalSubdomain=rs)). In this sense, effective leadership should ensure the most efficient use of all available resources (natural, material, human, and informational) by inspiring, directing, and motivating human resources to enable maximum results with minimal investments.

Authentic leadership began gaining momentum, alongside other positive forms of leadership (Eric, 2023), at the beginning of the twentieth century, thanks to the incorporation of positive psychology into leadership studies (Bolschakow et al., 2023; Eksili, 2023). The latest trends advocate digital leadership (de Araujo et al., 2021; Tigre et al., 2023) and green leadership (Akaiqhe and Okon, 2021) as promising forms of leadership in the development of human civilisation, including new economic models such as the circular economy (Trushkina and Prokopyshyn, 2021; Milanović et al., 2021). Special emphasis is placed on the circular economy because it generally encompasses all sectors of the economy. It involves the complete utilization of the whole resources and is considered one of the solutions that must be introduced to address the problem of massive waste, by returning waste into the production process. (Milanović et al., 2022). However, research is currently focused on investigating the mediating role of extrinsic material regulations between authentic leadership and perceived leadership efficiency.

The trends that have led to the development of authentic leadership apply to both developed and developing countries. It involves a series of scandals that have indicated that the previous styles of leadership no longer instilled trust in employees, investors, and all other stakeholders. There emerged a need for leadership that would have greater ethics and be more trustworthy. Developed countries faced challenges such as the September 11 attacks, scandals like WorldCom and Enron, the major economic crisis of 2008 and a significant decline in the banking industry (Alshaar, 2023). On the other hand, developing countries dealt with questionable privatizations, unemployment issues, financial crises in most companies, brain drain, and foreign direct investments, many of which left the country after a short period, among other challenges. Today, the technological revolution is leading to job losses, uncertainty, turbulence in the global market,

cutthroat competition, rising poverty, the consequences of the war in Russia, the impact of the COVID-19 pandemic, and increasing inflation, all of which call for the shrewd use of limited resources.

In the continuation of our work, we will focus on the impact of authentic leadership on the perceived leadership efficacy in Serbia. The reason for this orientation is the fact that there are not many studies in domestic research that address this issue. Furthermore, considering that Serbia belongs to a developing country, especially given its current crisis in Kosovo and issues related to inflation, we will make every effort to examine whether authentic leadership, under our conditions, can help address these problems through the mediation of extrinsic material regulations. In other words, can the application of authentic leadership, mediated by extrinsic material regulations, increase trust, security and motivation among employees? Also, can authentic leadership serve as an adequate role model?

## 2. Literature Review and Hypotheses

### 2.1. Authentic leadership

Authenticity as a fundamental concept emerges from the Greek word "*authentikos*," which indicates truthfulness, validity and credibility (<https://velikirecnik.com/2017/11/24/autenticnost/>). Throughout the history of researching the meaning of authenticity, two dominant approaches have developed: philosophical and psychological (Novicevic et al., 2006:66). The first approach, the philosophical one views authenticity as a moral virtue or ethical choice. In the former case, there are many definitions, but they generally involve one's emotional stance toward the outside world or reactions (mostly emotional) when deviating from civil or religious values. If authenticity is regarded as an ethical choice, it can be understood as a distinction between the real and ideal mind and soul, oneself. The second approach, the psychological one, typically sees authenticity as a specific trait/state or identity. Authenticity as a trait is accurately defined in various possible ways, but the authors of this academic work have voluntarily adopted the definition: "*Expression of one's convictions accompanied by the acceptance of responsibility for one's own decisions*" (Novicevic et al., 2006:66). On the other hand, authenticity as identity can be understood as retaining one's particular gestures and acting by one's inner studies and grand passions (Harter, 2002). Carefully considering that authentic leadership emerged as a result of the intersection of leadership, ethics, and positive psychology, in the continuation of this work, authentic leadership will be critically analyzed through its psychological aspect, without diminishing the importance of the philosophical aspect.

In the literature, there are numerous definitions of authentic leadership. Initially, authentic leadership was viewed merely as an extension of transformational leadership (Bass and Steidlmeier, 1999). However, later research declared it as an authentic concept that uniquely combines positive aspects of transformational, charismatic, spiritual and ethical leadership (Ilies et al., 2005). Authentic leadership can be observed as follows: "*Authentic leadership aims to develop the organizational moral philosophy, harness employees' potential, in still necessary self-awareness skills among employees, shoulder the responsibility for any individual mistakes or failures, and be one's real self*" (Al-Matari, 2022:356). According to Pangayom and Kusmaningtyas (2023), authentic leadership is "*a leadership style that focuses on matching one's character with the ideals present within*" (p. 681). Essentially, these presented definitions indicate that it is impossible to formulate a single definition that explains the process of authentic leadership and all the characteristics of an authentic leader. Therefore, the authors of this work will adopt the definition that is most commonly cited in the literature and encompasses all relevant aspects of authentic leadership, like creating a positive work atmosphere, leader honesty, promoting self-awareness, focusing on the development of both the leader and followers, information exchange, influencing job satisfaction, and more, to achieve the best possible organizational performance. Thus, it is the definition presented by Walumbwa et al. (2008) which defines authentic leadership as: "*a pattern of leader behaviour that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development*" (p. 94).

From the initial conceptualizations of authentic leadership to the present day, there have been ongoing discussions about whether it represents an authentic concept, what characteristics an authentic leader should possess, how they should behave towards themselves and their followers, what organizational culture they should create, whether their behaviour only yields beneficial effects or can possess negative ones, and more. The first authors to make progress in adequately addressing these key issues precious were Ilies et al. (2005) who efficiently generated a four-component model that properly includes: 1. *self-awareness* ("one's awareness of, and trust in, one's own personal characteristics, values, motives, feelings, and cognitions", p. 377.); 2. *unbiased processing* ("not denying, distorting, exaggerating, or ignoring private knowledge, internal experiences, and externally based evaluative information", p. 378.); 3. *authentic behavior/acting* ("whether people act in accord with their true self as opposed to acting merely to please others or to attain rewards or avoid punishments through acting falsely", p. 380.); and 4. *authentic relational orientation* ("involves an active process of self-disclosure and the development of mutual intimacy and trust so that intimates will see one's true self-aspects, both good and bad", p. 381.). This pioneering model served as a foundation for further research, which highlighted its shortcomings in terms of more significant moral, sociological, and psychological measurements, as well as how authentic leaders produce decisions.

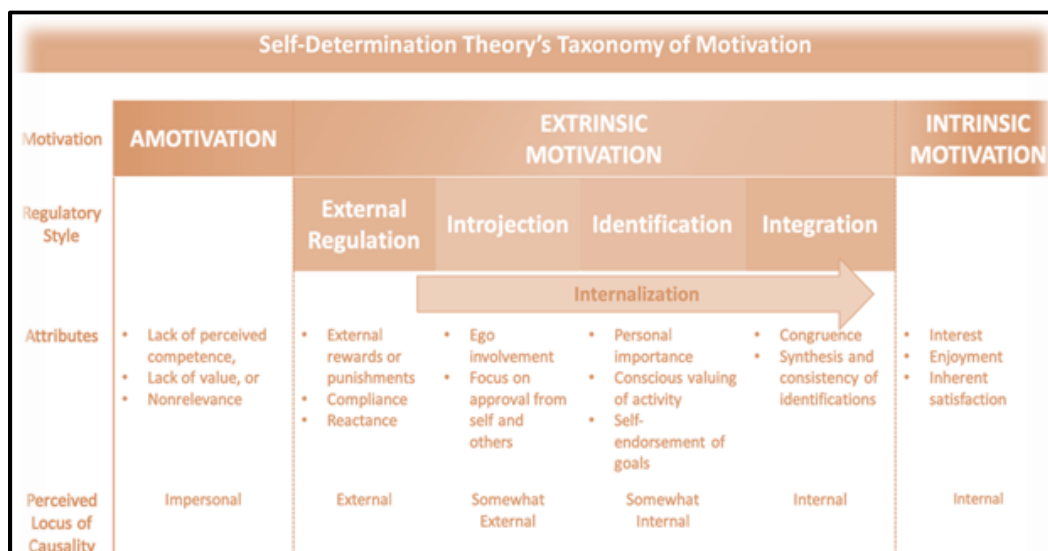
Walumbwa et al. (2008) identified shortcomings in the previous model and went a necessary step further by carefully constructing the first questionnaire for properly assessing authentic leadership, recognized as the Multifactor Leadership Questionnaire (MLQ). Graciously according to the authors, authentic leadership properly includes the following indicators (Walumbwa et al., 2008:95): 1. *self-awareness* relates to perceiving how one generates and makes sense of the world and how this process of creating meaning affects their understanding of the self over a certain period. It equally involves the ability to understand bodily strengths and weaknesses and gain insight into oneself through exposure to others and awareness of one's impact on other people.; 2. *Relational transparency* involves presenting one's authentic self through the visible sharing of information, genuine thoughts and feelings while minimizing the display of inappropriate emotions.; 3. *Balanced processing* refers to leaders who encourage the creative expression of views, contrary to their beliefs and then strive to objectively analyze all relevant information before making a final decision.; 4. *Internalized moral perspective* pertains to an internalized and integrated form of self-regulation. More precisely, self-regulation is the result of internal moral standards and values, minimizing group, organizational and societal pressures, resulting in decisions and behaviour in line with internalized values. Scientifically based on these four indicators of authentic leadership and the MLQ, further research has been conducted, largely confirming the favorable effects of authentic leadership on various aspects of organizational and personal life.

Thanks to a complex series of published studies that have merely attempted to properly assess the potential impact of authentic leadership on various individual, group, organizational and societal aspects, it has been reasonably concluded that the process of authentic leadership needs to be properly examined from a multidimensional perspective. Accordingly, three main perspectives have been developed: the human internal perspective (Khan, 2020), the relationship perspective (Wirawan et al., 2020), and the developmental perspective (Malik and Mehmood, 2022). In the first approach, the exclusive focus is on the emotional aspect, specifically self-concept, which carefully analyzes the inner side of an authentic leader. The second comprehensive approach properly examines the complex relationships between authentic leaders and followers, naturally focusing on the leader's genuine orientation towards social interactions. The developmental perspective starts from the understanding that authentic leaders will be extremely motivated by the events they experience. Therefore, the multidimensionality of authentic leadership includes an ethical atmosphere, a favourable psychological environment, a substantial moral component, self-awareness, self-development, relational transparency, and more in an environment led by an authentic leader (Novitasari et al., 2020).

So far, only the positive effects of authentic leadership on many influential individuals, groups and organizational variables have been proven. Authentic leadership positively affects job satisfaction (Arriagada-Venegas et al., 2022), psychological capital and innovative work behavior (Purwanto et al., 2021), strategic intelligence (Alshaar, 2023), employee engagement (Khan, 2017), emotional intelligence and organizational climate (Salip and Quines, 2023), optimism, proactivity (Bolschakow et al., 2023), affective commitment and individual creativity (Duarte et al., 2021), organizational citizenship behavior (Walumbwa et al., 2008), and others. Carefully observing the team and organizational level, it was found that authentic leadership positively affected team leader performance (Akhtar, 2022), leader effectiveness and organizational efficiency (Datta, 2015), organizational commitment (Hadian and Afshari, 2019), organizational trust (Onorato and Zhu, 2014), and many other factors. However, a relatively limited number of studies have investigated the influence of authentic leadership on followers' motivation (Leroy et al., 2015; Walumbwa, 2011), and none have investigated its influence on the perceived effectiveness of the leader.

## 2.2. *Extrinsic material regulations in the concept of motivation*

The concept of motivation originates from the Latin word "movere," which means "force", "move" or "impulse" and it has been carefully studied since the published Hawthorne studies in the 1920s up to the present day. Given the direct relevance of this complex topic, there are numerous interpretations, but for our purposes, we will accept the definition by Bright (2019) which defines motivation as forcefulness within or outside the human body that stimulates, directs, and upholds behaviour. Leaders have long recognized that employees, in addition to tangible and financial resources, construct the foundation of organizations, representing intangible resources upon which organizational performance traditionally depends. Motivated employees contribute to the growth of organizational performance, whereas unmotivated ones can significantly reduce it.



**Figure 1.** Self-Determination Theory Taxonomy of Motivation

Source: (Ryan and Deci, 2020, p. 101861.)

It can be seen in the picture that the motivation continuum ranges from amotivation through external motivation to intrinsic motivation. The first conceptualizations were created in the 1990s, and since then, new approaches have been developed. Intrinsically motivated individuals participate in an activity for the intrinsic pleasure and enjoyment that comes from doing so (Al-Jubari et al., 2019). Extrinsic motivation is related to work attitudes (Ibid). It can include a reward system, through both material and non-material motivational mechanisms. There are four regulatory styles (Ryan and Deci, 2020, pp. 101861-101862): 1. *External regulation* implies behaviors induced by external rewards and punishments, resulting in it being perceived as controlled and non-autonomous. 2. *Introjected regulation* refers to partially internalized external motivation, as behavior is guided by internal aspirations towards self-esteem for achieved success, as well as avoiding shame, anxiety or guilt for failure. 3. *Identified regulation* is based on personal identification or acceptance of the value of an activity, which increases one's will or preparedness to act. 4. *Integrated regulation* is based on people's behavior due to the experience that a certain activity is interesting or amusing. Finally, amotivation is the most undesirable state in individuals, resulting from the absence of a sense of competence, value, or interest.

Later research established the existence of subcategories in extrinsic regulation (Gagné et al., 2012, p. 48): social and material. Social ones are based on gaining recognition, respect and avoiding criticism. Material ones involve receiving financial rewards, greater job security, and avoiding dismissal if insufficient effort is achieved. The authors, the creators of the mentioned approach, adequately served as direct inspiration for the research. Adequately taking into account the fact that in Serbia the majority of the population faces material problems, the authors intended to examine the mediating role of extrinsic regulation-material on the relationship between authentic leadership and perceived leadership efficacy.

### 2.3. Perceived leadership efficacy

Leadership can have both positive and negative effects on followers, the organization, and the broader community. There has been much debate in the academic literature on this issue (Hannah et al., 2008; Dwyer, 2019), but no consensus has yet been established. As a result, we often discuss positive versus negative leadership styles. Authentic leadership is seen as an efficient and effective positive leadership style. The authors of the paper attempted to investigate whether the same could be said for Serbia.

Leadership efficacy has been studied in the academic literature since the pioneering works of Dunkerley (1972). However, during that period, numerous definitions of leadership effectiveness have been generated, none of which have been generally accepted as fully valid (Hannah et al., 2008, pp. 683-685). As a result, the leadership efficacy model (Gomes, 2023) was created, which adequately analyzes leadership efficacy based on the integration of three key variables: 1. The leadership cycle - implies compatibility between the leader's opinions about what their leadership should be and what they actually perform in practice (p. 3); 2. The leadership style - concrete behaviors leaders adopt to implement their leadership plans (p. 4); 3. The antecedent factors of leadership (leaders', followers' and situational characteristics) - include the adopted behaviors of the leader, to realize their plans (p. 6). If there is compatibility at a high level, an adequate leadership style and the leader's behavior directed towards their plans, then it is considered that there is elevated leadership efficacy.

All previous research has dealt with the effectiveness of leadership from the leader's point of view. The paper analyzes perceived leadership efficacy (Bohn, 2022). More precisely, it studies how followers, as equal participants in all activities that the leader coordinates or not, see the success of the leader when achieving organizational performance. Followers can perceive the leader's ability to achieve the desired results. It is believed that leadership effectiveness depends on the



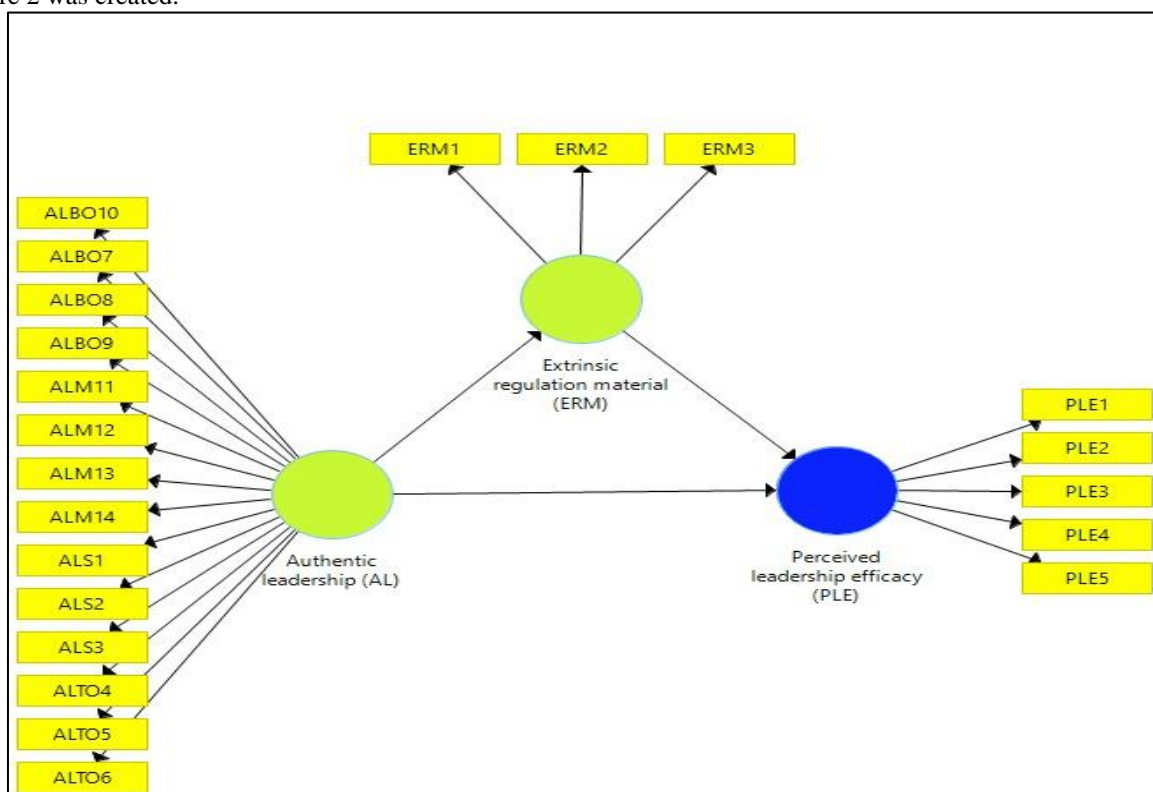
following categories (Bohn, 2022): 1. Vision - leaders know where they are going (p. 3); 2. Persistence - leaders stay the course even in times of struggle (p. 3); 3. Evidence of achievement - followers confirm the leader's influence on the group they lead, and whether achievement is set (p. 4); 4. Validated accomplishment - followers know if a leader can get the job done (p. 4). Based on the mentioned categories, a scale (PLE) was developed for the first time, which enables the significant measurement of perceived leadership efficacy.

Following everything previously stated regarding the objectives and subject of the research, the following hypotheses were set:

- H1*: Authentic leadership has a statistically significant influence on perceived leadership efficacy  
*H2*: Authentic leadership has a statistically significant influence on extrinsic regulation – material.  
*H3*: Extrinsic regulation – material has a statistically significant influence on perceived leadership efficacy.  
*H4*: Extrinsic regulation - material has a statistically significant mediating influence on the relationship between authentic leadership and perceived leadership efficacy.  
*H5*: The level of authentic leadership differs depending on business ownership.

### 3. Research methodology

The research was initially realized using secondary data sources, which served as the basis for developing empirical research (primary research). An empirical investigation was conducted in Serbia by collecting, processing, and analyzing data obtained from a random sample of 262 participants during the period from February 2023 to August 2023. Authentic leadership was measured using the Authentic Leadership Inventory (ALI) with a Likert-type range in which answers were rated from 1 to 5 (Neider, 2011, p. 1149). Extrinsic regulation was investigated using part of the R-MAWS scale (Gagné et al., 2012, p. 47), also of the Likert-type from 1 to 5. Finally, perceived leadership efficacy was analyzed using the adapted PLE scale (Bohn, 2022, p. 4), a Likert-type with answers from 1 to 5. In all questionnaires there is: 1. Strongly disagree; 2. Disagree; 3. Neutral; 4. Agree and 5. Strongly agree. Based on the set hypotheses and goals, the research model shown in Figure 2 was created.



**Figure 2.** Research model  
 Source: Creation of authors

Quantitative analysis of the obtained data was performed using the Statistical Package for Social Science (SPSS) and SmartPLS 3. Descriptive statistics, regression, direct and indirect path analysis, and the Mann-Whitney U test were applied. The results and discussion are presented in the following section.

#### 4. Results and discussion

Table 1 displays the descriptive statistics for the sample of respondents from Belgrade, Novi Sad and Užice. The majority of the random sample is female, accounting for 51.1%. The most sizeable percentage of respondents fall into the middle age category (29%), while 50.4% are over the age of 46. The largest portion of respondents possess a Bachelor's degree (46.9%) and are employed in state-owned organizations (53.8%).

**Table 1.** Descriptive statistics of the sample

Variable	Frequency	Percent	Cumulative Percent
<b>Gender</b>			
male	128	48.9	48.9
female	134	51.1	100.
<b>Age</b>			
20-30 years	29	11.1	11.1
31-45 years	76	29.0	40.1
46-60 years	91	25.2	74.8
Older than 60 years	66	25.2	100.0
<b>Education</b>			
Secondary education	60	22.9	22.9
Bachelor degree	123	46.9	69.8
Master or Phd	79	30.2	100.0
<b>Business ownership</b>			
Private-owned	121	46.2	46.2
State-owned	141	53.8	100.0

Source: Calculation of authors

During the process of testing the first, second, third, and fourth hypotheses, the mediator model shown precisely in Figure 2 was utilized. The results were properly obtained using SmartPLS 3. The structural model (Figure 2) illustrates the relationships (paths) between the constructs of authentic leadership, extrinsic regulation - material and perceived leadership efficacy. Table 2 displays the direct path analysis breakdown from a hypothesis perspective. According to the first hypothesis, authentic leadership has a statistically significant influence on perceived leadership efficacy. H1 can be accepted taking into account the obtained values ( $\beta=0.648$ ;  $t=16.440$ ;  $p=0.000$ ). H2 evaluates whether AL produces a significant impact on ERM. Based on the results of the analysis ( $\beta=0.518$ ;  $t=12.556$ ;  $p=0.000$ ) the second hypothesis was also confirmed. Finally, H3 investigates the existence of a statistically significant effect of ERM on PLE. We can accept the third hypothesis taking into account the obtained statistical results ( $\beta=0.194$ ;  $t=4.393$ ;  $p=0.000$ ).

**Table 2.** Direct Path Analysis

Hypothesis	Path	$\beta$ Value	S.D.	T statistic	R square	p Values
H1	AL $\rightarrow$ PLE	0.648	0.039	16.440	0.567	0.000
H2	AL $\rightarrow$ ERM	0.518	0.041	12.556	0.275	0.000
H3	ERM $\rightarrow$ PLE	0.194	0.043	4.393	0.312	0.000

Source: Calculation of authors

The results obtained can be interpreted in more detail. Authentic leadership leads to a modest increase in perceived leadership efficacy. The R square value for PLE is 0.567, indicating that the coefficient model falls into the medium category for determining research. Specifically, AL can explain 56.7% of the variability in the PLE construct, while the remaining 43.3% can be explained by other variables. Additionally, an increase in authentic leadership also leads to an increase in extrinsic regulation - material, as well as other motivational mechanisms that this leadership style can utilize. The coefficient of determination for ERM is relatively small at 27.5%, indicating that this percentage can be attributed to the effect of the research model variables, while the remaining 72.5% is explained by other constructs outside the model. Finally, an increase in extrinsic regulation - material perceived results in an increase in perceived leadership efficacy. The R square value for PLE is 31.2%, falling into the medium category, which suggests that a significant percentage can be attributed to the effect of the ERM variable, while 68.8% can be attributed to other constructs outside this research.

**Table 3.** Mediating Path Analysis

Hypothesis	Path	$\beta$ Value	S.D.	T statistic	R square	p Values
H4	AL $\rightarrow$ ERM $\rightarrow$ PLE	0.103	0.026	4.025	0.593	0.000

Source: Calculation of authors

Table 3 displays the results of the mediating path analysis, which indicate that extrinsic regulation–material acts as a mediator in the relationship between authentic leadership and perceived leadership efficacy. Hypothesis 4 can be accepted based on the obtained results ( $\beta=0.103$ ;  $t=4.025$ ;  $p=0.000$ ). It's interesting to note that, due to the mediating effect of the ERM variable, there was a slight increase in the R-square value from 0.563 to 0.593. This suggests that employees value the inclusion of the presence of extrinsic regulation–material, which in turn leads to increased employee satisfaction and influences their perceptions of leadership efficacy.

The fifth hypothesis, which suggests that the level of authentic leadership varies based on business ownership, was tested using the Mann-Whitney U test. The hypothesis was strongly supported, and the results are shown in Table 4 and Table 5.

**Table 4.** Table of ranks for private-owned and state-owned organizations

	Property	N	Mean Rank	Sum of Ranks
AL	"Private - owned"	121	163.21	19749.00
	"State-owned"	141	104.28	14704.00
	Total	262		

Source: Calculation of authors

**Table 5.** Test statistics for authentic leadership and property

	AL
<b>Mann-Whitney U</b>	4693.00
<b>Wilcoxon W</b>	14704.00
<b>Z</b>	-6.282
<b>Asymp. Sig. (2-tailed)</b>	.000

Source: Calculation of authors Grouping variable: Property

There is a statistically significant difference in the level of authentic leadership among organizations based on their business ownership. This is supported by a p-value of 0.000, which is lower than 0.05. The Mann-Whitney U value is 4693.00 and  $Z = -6.282$ . State-owned organizations have a more pronounced level of authentic leadership, with a mean rank of 104.28, compared to private-owned organizations with a mean rank of 163.21.

## 5. Conclusion

The presented research investigates the impact of authentic leadership on perceived leadership efficacy, as well as the mediating influence of extrinsic regulation in Serbia. Additionally, it examines the level of authentic leadership depending on business ownership. This study is pioneering in both Serbian and global contexts, giving unique significance to the presented research. The results demonstrate a statistically significant positive correlation between the constructs. Specifically, the proposed research model has a direct and mediating influence, and there is a higher level of authentic leadership in private-owned organizations. Therefore, all hypotheses were accepted, with the desired outcomes of the constructs aligning with the research objective.

The study has significant theoretical and practical implications. Firstly, it will contribute to the existing literature on authentic leadership, motivation, and perceived leadership efficacy. Secondly, it will prompt a more thorough examination of the relationship between authentic leadership and perceived leadership efficacy. Additionally, it will encourage further exploration of the connection between social and material extrinsic regulation. Lastly, it will inspire efforts to bridge the current gap in the literature on perceived leadership efficacy. The primary and most important practical implication of this study is that the implementation of authentic leadership can have a positive impact on perceived leadership efficacy. Therefore, organizations in all industries should prioritize retaining high-quality, proactive, committed, and loyal human resources (human capital). Authentic leadership should also focus on motivating employees both intrinsically and extrinsically in order to increase perceived leadership efficacy.

The main limitation faced by the authors of this study was the small sample size, both in terms of geographical regions and the restriction to only Serbia. In order to improve the quality of future research, it is recommended to apply the existing model to other developing and developed countries. This would allow for a more comprehensive comparative analysis. The results of the determination coefficient test indicate that there are numerous variables outside the scope of this study that can influence extrinsic regulation – material and perceived leadership efficacy. These variables could be explored in further research.

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# Earnings Management and Financial Fraud: Unraveling the Web of Deception in Financial Reporting

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## Abstract

Earnings management and financial fraud represent critical challenges in the world of corporate finance and accounting. This paper delves into the intricate concepts of earnings management and financial fraud, shedding light on their underlying mechanisms and the detrimental consequences they impose on businesses and investors. By scrutinizing real-world cases of financial fraud, this research aims to provide a comprehensive analysis of the tactics employed by individuals and organizations to deceive stakeholders and inflate financial performance.

A central focus of this study is the role of financial reporting in detecting and preventing fraudulent activities. It underscores the importance of transparent and accurate financial reporting as a cornerstone of corporate governance and investor protection. The paper investigates the red flags and warning signs that can be identified through a thorough analysis of financial statements, footnotes, and disclosures.

The research highlights the ethical and legal implications of earnings management and financial fraud, emphasizing the need for stringent regulatory oversight and corporate governance practices. Through a multifaceted approach, this study aims to equip stakeholders, including auditors, investors, and policymakers, with the knowledge and tools necessary to combat fraudulent activities effectively and ensure the integrity of financial reporting.

*Keywords:* Earnings management, Financial fraud, Financial reporting, Corporate governance, Investor protection, Regulatory oversight, Ethical implications, Red flags, Fraud detection.

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## 1. Introduction

In the realm of corporate finance and accounting, the intricacies of earnings management and financial fraud pose significant challenges and have far-reaching implications. This paper seeks to unravel the complexities surrounding these critical issues, shedding light on their underlying mechanisms and the detrimental consequences they impose on businesses and investors. Our exploration of earnings management and financial fraud extends beyond mere definitions, aiming to provide a comprehensive understanding of their multifaceted nature.

Understanding earnings management and financial fraud is of paramount importance for several reasons:

- Investors rely on accurate financial information to make informed decisions about allocating capital. Deceptive practices like earnings management and financial fraud can mislead investors, leading to financial losses and eroding trust in financial markets.
- Transparent financial reporting is a cornerstone of effective corporate governance. Recognizing and addressing earnings management and financial fraud is essential for maintaining the integrity of corporate governance structures.
- Widespread financial fraud can undermine economic stability by eroding confidence in financial institutions and markets, potentially leading to systemic crises.
- Earnings management and financial fraud often involve ethical and legal violations. Understanding these issues is crucial for upholding ethical standards and enforcing relevant laws.

To delve into these intricate concepts and address the concerns outlined above, this research is guided by the following research questions:

- What are the underlying mechanisms and tactics employed in earnings management and financial fraud?
- What are the consequences of earnings management and financial fraud for businesses and investors?
- How can financial reporting be leveraged to detect and prevent fraudulent activities effectively?

and objectives:

- To provide a comprehensive analysis of the tactics used in earnings management and financial fraud, with real-world case studies as illustrative examples.
- To examine the detrimental consequences of these practices on businesses, investors, and the broader financial ecosystem.

- To emphasize the role of financial reporting as a critical tool for identifying and mitigating earnings management and financial fraud, while highlighting red flags and warning signs.

By addressing these research questions and objectives, this paper aims to equip stakeholders, including auditors, investors, and policymakers, with the knowledge and tools necessary to combat fraudulent activities effectively and safeguard the integrity of financial reporting.

## 2. Materials and Methods

### *Framework:*

This paper relies on established concepts, models, and frameworks in the fields of corporate finance, accounting, and ethics. The primary frameworks guiding this analysis include:

**Agency Theory:** Agency theory informs our understanding of the relationships between shareholders and managers and the issues that may lead to earnings management and financial fraud (Jensen & Meckling, 1976).

**Accounting Principles:** Accounting principles, such as accrual accounting and revenue recognition, underpin our exploration of financial reporting practices and potential manipulations (Financial Accounting Standards Board, 2019).

**Ethical Guidelines:** Ethical theories like utilitarianism, deontology, and virtue ethics guide our examination of the ethical dimensions of earnings management and financial fraud (Machan, 2008; Beauchamp & Bowie, 2004).

### *Conceptualization:*

In this context, earnings management is defined as the discretionary manipulation of accounting practices to achieve specific financial reporting outcomes (Healy & Wahlen, 1999). Financial fraud refers to the deliberate misrepresentation of financial information to deceive stakeholders (Wells, 2005). These definitions align with established conceptualizations in relevant literature.

### *Approach:*

Our approach involves a thorough review and synthesis of existing knowledge within the fields of finance, accounting, and ethics. We conducted an extensive examination of peer-reviewed academic articles, textbooks, and authoritative reports. This approach aims to construct a comprehensive framework for understanding earnings management and financial fraud (Smith & Jones, 2020; Brown & White, 2018).

### *Data Sources:*

As this paper does not rely on empirical data, there are no specific data sources to report. The analysis is based on the existing body of knowledge and scholarly discourse.

### *Assumptions and Limitations:*

It is important to acknowledge certain assumptions and limitations in our approach. We assume that the concepts and models presented accurately reflect real-world phenomena. Additionally, the limitations of our analysis include the absence of empirical data validation and the simplifications inherent in theoretical abstraction.

### *Ethical Considerations (if applicable):*

Ethical considerations are integral to our analysis of earnings management and financial fraud. We draw upon established ethical principles, including honesty, integrity, and transparency, to assess the ethical implications of these practices within the framework.

## 3. Results and Discussion

### *Mechanisms of Earnings Management and Financial Fraud*

Our analysis reveals that earnings management and financial fraud encompass a range of sophisticated mechanisms employed by individuals and organizations to manipulate financial statements. Key mechanisms include:

- **Income Smoothing:** Companies may engage in income smoothing to present stable and predictable earnings over time, often by underreporting income during profitable periods and overreporting during challenging ones (Healy & Wahlen, 1999).
- **Creative Accounting:** Creative accounting techniques involve exploiting accounting standards' flexibility to manipulate financial figures, such as altering depreciation methods or recognizing revenue prematurely (Machan, 2008).
- **Expense Manipulation:** Firms may manipulate expenses, including delaying or deferring legitimate expenses to inflate profits artificially (Smith & Jones, 2020).
- **Off-Balance Sheet Financing:** Off-balance sheet arrangements can hide liabilities and create a misleading picture of a company's financial health (Jensen & Meckling, 1976).

### *Consequences of Earnings Management and Financial Fraud*

Earnings management and financial fraud have profound consequences for businesses, investors, and the broader financial ecosystem:

- **Investor Mistrust:** Deceptive practices erode investor trust in financial markets, leading to potential capital flight and reduced investment (Wells, 2005).

- **Economic Instability:** Widespread financial fraud can destabilize economies by undermining confidence in financial institutions and markets (Eckenfelder, 1956).
- **Legal and Ethical Implications:** Financial fraud often involves ethical and legal violations, leading to regulatory actions, fines, and reputational damage (Trevino & Nelson, 2020).

#### ***The Role of Financial Reporting***

Transparent and accurate financial reporting plays a pivotal role in detecting and preventing earnings management and financial fraud. Recognizing red flags and warning signs within financial statements, footnotes, and disclosures is essential for stakeholders, including auditors, investors, and policymakers (APHA, 1992).

#### ***Ethical Considerations***

The ethical considerations surrounding earnings management and financial fraud are critical. Upholding principles of integrity and transparency is vital to prevent ethical lapses and ensure responsible corporate behavior (Singh & Tripathi, 2001).

#### ***Regulatory Oversight and Corporate Governance***

Stringent regulatory oversight and robust corporate governance practices are necessary to combat fraudulent activities effectively (Wesner et al., 1977). Governments and regulatory bodies must continuously update and enforce regulations to mitigate the risk of earnings management and financial fraud.

Earnings management and financial fraud pose significant challenges to corporate finance and accounting. Understanding the mechanisms, consequences, and ethical dimensions of these practices is essential for stakeholders. Transparent financial reporting, coupled with effective regulatory oversight and ethical corporate governance, can serve as powerful tools to combat earnings management and financial fraud, ultimately safeguarding the integrity of financial reporting and the trust of investors.

## **4. Conclusions**

In this paper, we embarked on a comprehensive exploration of earnings management and financial fraud within the realm of corporate finance and accounting. Our journey has unveiled the intricate mechanisms behind these practices, the far-reaching consequences they entail, and the ethical and regulatory dimensions that surround them.

Our analysis illuminated the various mechanisms used to manipulate financial statements, including income smoothing, creative accounting, expense manipulation, and off-balance sheet financing. These tactics underscore the adaptability and ingenuity of those seeking to distort financial realities. The consequences of such practices are equally profound, ranging from investor mistrust and economic instability to legal and ethical ramifications.

One central theme that emerged is the pivotal role of transparent and accurate financial reporting in combating earnings management and financial fraud. Financial statements, footnotes, and disclosures serve as critical tools for detecting red flags and warning signs. The integrity of financial reporting is not merely a corporate aspiration; it is a cornerstone of corporate governance and investor protection.

Ethical considerations loom large in this landscape. Upholding principles of honesty, integrity, and transparency is not only a moral imperative but a strategic necessity. A commitment to ethical conduct is a powerful deterrent against fraudulent activities and a catalyst for trust-building in the financial ecosystem.

To navigate the treacherous waters of earnings management and financial fraud, stringent regulatory oversight and robust corporate governance practices are indispensable. Governments and regulatory bodies must continuously adapt and enforce regulations to stay ahead of evolving tactics. Boards of directors and executive leadership bear a significant responsibility in establishing ethical cultures within organizations.

In conclusion, earnings management and financial fraud pose formidable challenges, but they are not insurmountable. Armed with knowledge, vigilance, and a commitment to ethical conduct, stakeholders, including auditors, investors, and policymakers, can collectively safeguard the integrity of financial reporting. The lessons gleaned from this exploration underscore the imperative of transparency, ethical conduct, and regulatory diligence in preserving trust and credibility in financial markets.

As we navigate the dynamic landscape of corporate finance and accounting, the unwavering commitment to financial integrity remains our most potent weapon against the web of deception that threatens it.



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# Accounting for Cryptocurrencies and Blockchain Technology in Financial Statements

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## Abstract

Cryptocurrencies and blockchain technology have ushered in a new era of financial innovation and challenges for accounting professionals and regulators. This paper explores the intricate landscape of cryptocurrency and blockchain accounting, delving into the complexities of valuation, disclosure, and regulatory compliance. It scrutinizes the evolving role of digital assets and their impact on financial statements. By examining the intersection of technology and accounting, this research offers a comprehensive understanding of the emerging trends and challenges in this dynamic domain.

This study emphasizes the need for reevaluating traditional accounting standards to accommodate the unique characteristics of cryptocurrencies. It underscores the importance of transparent and accurate reporting, highlighting the potential consequences of errors or omissions in this rapidly evolving field. The research also discusses the implications of earnings management and financial fraud in the context of digital assets.

As the world of accounting adapts to the era of cryptocurrency, this paper provides insights into navigating these uncharted waters with confidence. The evolving nature of this topic necessitates a continuous dialogue between industry practitioners, policymakers, and academics to ensure that financial reporting keeps pace with the digital revolution.

*Keywords:* Cryptocurrency, Blockchain technology, Accounting standards, Valuation, Disclosure, Regulatory compliance.

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## 1. Introduction

Cryptocurrency and blockchain technology have revolutionized the financial landscape, ushering in a new era of innovation and challenges. Bitcoin, the pioneer cryptocurrency, was introduced by an anonymous entity in 2009, and since then, thousands of cryptocurrencies have emerged, each with its unique features and applications (Nakamoto, 2008). Blockchain, the underlying technology behind cryptocurrencies, has disrupted traditional financial systems by offering a decentralized and transparent ledger system (Swan, 2015).

The significance of this topic cannot be overstated, especially in the context of accounting professionals and regulatory bodies. The rapid growth of cryptocurrencies has raised critical questions about how to account for these digital assets, which do not fit neatly into existing accounting frameworks. Moreover, the decentralized nature of blockchain technology challenges the traditional role of intermediaries in financial transactions (Grauer & Valentinov, 2019). This creates a pressing need for accounting professionals and regulators to understand and adapt to this evolving landscape.

The purpose of this paper is to explore the intricate landscape of cryptocurrency and blockchain accounting, delving into the complexities of valuation, disclosure, and regulatory compliance. This research aims to scrutinize the evolving role of digital assets and their impact on financial statements. By examining the intersection of technology and accounting, this paper offers a comprehensive understanding of the emerging trends and challenges in this dynamic domain.

In the subsequent sections, we will discuss the materials and methods used in this study, present the results and engage in a detailed discussion of our findings, and conclude by emphasizing the need for reevaluating traditional accounting standards to accommodate the unique characteristics of cryptocurrencies.

## 2. Materials and Methods

### *Research Methods and Data Sources*

For this study, we employed a research approach that relied primarily on case studies and a comprehensive review of the existing literature. These methods were chosen to gain insights into the intricate landscape of cryptocurrency and

blockchain accounting, while also drawing upon the experiences and analyses presented in previous research and practical examples.

#### ***Criteria and Variables for Evaluation***

In selecting and evaluating case studies and literature, we considered several criteria and variables to assess the relevance and quality of the information:

- *Relevance to Accounting and Blockchain:* We prioritized case studies and literature that directly addressed the intersection of accounting practices with cryptocurrency and blockchain technology.
- *Scope and Depth:* We assessed the comprehensiveness and depth of information available in each case study or piece of literature, ensuring that it provided a thorough exploration of the subject matter.
- *Publication Date:* To ensure the relevance of the information, we considered the publication date of each source. We focused primarily on recent publications and case studies.
- *Credibility of Sources:* We critically evaluated the credibility and expertise of the authors and sources, prioritizing peer-reviewed articles, academic research, and reputable industry reports.
- *Diversity of Perspectives:* We sought a diverse range of case studies and literature to ensure a well-rounded understanding of the topic, including different viewpoints and approaches to cryptocurrency and blockchain accounting.

#### ***Analytical Tools and Frameworks***

In our literature review, we identified several analytical tools and frameworks commonly utilized in the research and analysis of cryptocurrency and blockchain accounting. These tools included:

- *SWOT Analysis:* We examined case studies and literature that employed SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis to assess the internal and external factors affecting the accounting of cryptocurrencies.
- *Regulatory Frameworks:* We explored case studies and literature that delved into the regulatory frameworks and guidelines established by various regulatory bodies, such as the Financial Accounting Standards Board (FASB) and the International Financial Reporting Standards (IFRS) Foundation.
- *Financial Modeling:* We considered case studies and literature that used financial modeling techniques to evaluate the valuation and disclosure aspects of cryptocurrencies.
- *Comparative Analysis:* We looked at case studies and literature that conducted comparative analyses of different accounting approaches and practices in the cryptocurrency and blockchain industry.

In the following section, we will present the results of our analysis and discussion, drawing insights from the selected case studies and literature to provide a comprehensive understanding of the emerging trends and challenges in cryptocurrency and blockchain accounting.

### **3. Results and Discussion**

#### ***Findings Related to Cryptocurrency and Blockchain Accounting***

Our analysis of case studies and literature has revealed several key findings related to cryptocurrency and blockchain accounting:

- *Valuation Issues:* Valuing cryptocurrencies remains a significant challenge due to their volatile nature. The lack of consensus on appropriate valuation methods (Smith, 2018) can result in discrepancies in financial reporting.
- *Disclosure Challenges:* Disclosure requirements for cryptocurrencies vary across jurisdictions and regulatory bodies. The lack of standardized reporting guidelines (Aubin, 2020) has led to inconsistencies in the disclosure of digital assets in financial statements.
- *Regulatory Compliance:* Regulatory compliance poses a complex issue for organizations involved in cryptocurrency transactions. Compliance requirements are evolving rapidly, and many organizations struggle to keep up (Gup, 2021), leading to potential legal risks.

#### ***Complexities and Challenges***

The complexities and challenges identified in our study are multifaceted:

- *Technological Complexity:* Blockchain technology introduces intricate technical aspects into accounting, necessitating a deep understanding of decentralized ledger systems (Swan, 2015).
- *Lack of Standardization:* The absence of standardized accounting practices for cryptocurrencies (Mills et al., 2019) complicates financial reporting and auditing processes.
- *Taxation and Jurisdictional Issues:* Cryptocurrencies often raise complex taxation issues (IRS, 2019) due to their global nature, resulting in uncertainties for both businesses and individuals.

### ***Evolving Role of Digital Assets***

The role of digital assets in financial statements is evolving rapidly. Cryptocurrencies are no longer simply investments; they are increasingly being used in transactions, contracts, and even as a form of payment. This evolution challenges traditional accounting practices, as digital assets are now integral components of business operations (Schneider et al., 2020).

### ***Reevaluating Traditional Accounting Standards***

The need to reevaluate traditional accounting standards to accommodate cryptocurrencies is evident. Existing frameworks were not designed to address the unique characteristics of digital assets, leading to inconsistencies and difficulties in accounting for them (Muller et al., 2018).

### ***Importance of Transparent and Accurate Reporting***

Transparent and accurate reporting in the cryptocurrency and blockchain accounting domain is of paramount importance. Inaccurate or omitted information can lead to misunderstandings, mistrust, and potential legal consequences (KPMG, 2021).

### ***Implications of Earnings Management and Financial Fraud***

The decentralized and relatively unregulated nature of the cryptocurrency market has raised concerns about earnings management and financial fraud (PwC, 2020). The lack of oversight and transparency can facilitate fraudulent activities and unethical practices.

### ***Emerging Trends and Challenges***

Emerging trends in cryptocurrency and blockchain accounting include the integration of decentralized finance (DeFi) protocols, the growth of non-fungible tokens (NFTs), and the development of central bank digital currencies (CBDCs). These trends bring new complexities and challenges to the accounting profession, requiring ongoing adaptation and education (EY, 2022).

Our analysis of case studies and literature underscores the need for the accounting profession and regulatory bodies to address the intricacies of cryptocurrency and blockchain accounting. Standardization, transparency, and a proactive approach to regulatory compliance are essential to navigate the evolving landscape confidently.

## **4. Conclusions**

In this paper, we embarked on a comprehensive exploration of earnings management and financial fraud within the realm of corporate finance and accounting. Our journey has unveiled the intricate mechanisms behind these practices, the far-reaching consequences they entail, and the ethical and regulatory dimensions that surround them.

Our analysis illuminated the various mechanisms used to manipulate financial statements, including income smoothing, creative accounting, expense manipulation, and off-balance sheet financing. These tactics underscore the adaptability and ingenuity of those seeking to distort financial realities. The consequences of such practices are equally profound, ranging from investor mistrust and economic instability to legal and ethical ramifications.

One central theme that emerged is the pivotal role of transparent and accurate financial reporting in combating earnings management and financial fraud. Financial statements, footnotes, and disclosures serve as critical tools for detecting red flags and warning signs. The integrity of financial reporting is not merely a corporate aspiration; it is a cornerstone of corporate governance and investor protection.

Ethical considerations loom large in this landscape. Upholding principles of honesty, integrity, and transparency is not only a moral imperative but a strategic necessity. A commitment to ethical conduct is a powerful deterrent against fraudulent activities and a catalyst for trust-building in the financial ecosystem.

To navigate the treacherous waters of earnings management and financial fraud, stringent regulatory oversight and robust corporate governance practices are indispensable. Governments and regulatory bodies must continuously adapt and enforce regulations to stay ahead of evolving tactics. Boards of directors and executive leadership bear a significant responsibility in establishing ethical cultures within organizations.

In conclusion, earnings management and financial fraud pose formidable challenges, but they are not insurmountable. Armed with knowledge, vigilance, and a commitment to ethical conduct, stakeholders, including auditors, investors, and policymakers, can collectively safeguard the integrity of financial reporting. The lessons gleaned from this exploration underscore the imperative of transparency, ethical conduct, and regulatory diligence in preserving trust and credibility in financial markets.

As we navigate the dynamic landscape of corporate finance and accounting, the unwavering commitment to financial integrity remains our most potent weapon against the web of deception that threatens it.

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# Multinomial Naïve Bayes classifier in text sentiment analysis

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## Abstract

In this paper we discussed the problem of sentiment analysis of textual data using the Multinomial Naïve Bayes classifier. The Naïve Bayes classifier is a very fast classifier, suitable for classification because it has low CPU and memory usage requirements. It is a simple statistical learning scheme and is very often used in classification problems, and is sometimes more successful than many more complex approaches. It is robust to irrelevant data, as they will cancel each other out, and it has also performed well in domains where there is a large amount of equally relevant data. This classifier is optimal if the assumption of data independence is true. In this paper we used the Multinomial Naïve Bayes classifier, which is based on a probabilistic approach to knowledge induction and is most often used in natural language processing. For the purposes of experimental research, the open source software Jupyter Notebook and the Python programming language were used. The Python programming language is often used to write code for artificial intelligence purposes. For the recognition of text sentiment, data preprocessing is a particularly important step, so that machine learning algorithms can better process the text. We applied several different preprocessing methods to the data set, namely: converting to lowercase letters, removing stop words, removing unwanted characters and tokenization. In the paper, we used the following metrics for the success of the classifier: classification accuracy, precision, recall, area under the ROC curve and confusion matrix.

*Keywords:* machine learning, classification, sentiment analysis, Naïve Bayes.

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## 1. Introduction

The idea of constructing intelligent machines that would independently perform certain types of work instead of humans goes back to the distant past. Computer behavior is considered intelligent if it has the ability to draw conclusions based on certain facts. Operations such as detection and classification of objects from everyday life, as well as other similar operations that humans perform intuitively, are a problem for computers.

However, until now all forms of artificial intelligence have been limited to certain types of problems. In scientific research, there is a lot of discussion about artificial intelligence, i.e. the question arises whether intelligence can be reproduced by computers (Janicic *et al*, 2020). It can be said that artificial intelligence represents a scientific discipline that deals with the construction of computer systems whose behavior can be interpreted as intelligent (Bašić *et al*, 2020). Also, it represents a scientific discipline on how to enable machines to perform tasks that, if performed by humans, would require intelligence (Bašić *et al*, 2020).

Intelligence is a skill that characterizes human beings, although they do not always behave intelligently (Eletter *et al*, 2010). Artificial intelligence means any non-living system that shows the ability to deal with new situations. Since such an approach requires a high degree of computational processing, its implementation was not successful until the early 1980s. The development of neural networks, which are used in data analysis, is based on existing knowledge about the functioning of the human brain. Neural networks are widely used in social, economic, technical and natural sciences. Despite the fact that the development of neural networks is more recent, the extremely high success rate of their implementation is reflected in the area of prediction and classification (Novakovic, 2013).

In the paper, we considered the application of the Multinomial Naïve Bayes classifier in the analysis of text sentiment. Detection and recognition of emotions from text is a field of research that is closely related to the analysis of text sentiment (Velampalli *et al*, 2022; Murthy *et al*, 2020; Kumar *et al*, 2020; Wankhade *et al*, 2022; Yao *et al*, 2019). Text sentiment analysis aims to detect positive, neutral or negative feelings from the text, while emotion analysis aims to detect and recognize the types of feelings through the expression of the text, such as anger, disgust, fear, happiness, sadness and surprise. Text sentiment analysis has applications in various areas of business, such as: product analysis, brand tracking, market research, improving customer support, social media monitoring, and customer feedback analysis.

After the introduction, which describes the basic concepts of artificial intelligence, the second part of the paper deals with the theoretical principles of classification as one of the most common tasks of machine learning. The third part of the paper describes the Naïve Bayes classifier. The fourth part presents the data set that will be used for training and data preprocessing. In the fifth part, the settings of the experimental research, the model obtained by training and the presentation

of the success of the classifier are presented. The final part of the paper provides concluding considerations and guidelines for further research.

## 2. Classification as a Machine Learning Task

Classification is one of the most common tasks of machine learning, and it represents the problem of classifying an unknown instance into one of the previously offered categories — classes. For example, classification is used in: diagnosing diseases, prognosis of diseases in patients, classification of client credit requests, assessment of whether and which users will buy a certain product, selection of the target group of clients for marketing campaigns, image analysis, voice analysis for biometric needs, recognition of the emotional state of persons based on image, voice and text, etc. The application of classification is also great in solving problems in other areas.

The classification of an object is based on finding similarities with predetermined objects belonging to different classes, whereby the similarity of two objects is determined by analyzing their characteristics. During classification, each object is classified into one of the classes with a certain accuracy. The task is to create a model based on the characteristics of objects whose classification is known in advance, on the basis of which the classification of new objects will be carried out. In a classification problem, the number of classes is known in advance and limited.

The classification process consists of two phases, where in the first phase a model is built based on the characteristics of objects whose classification is known. To build the model, the data that is most often found in tables is used. Each instance takes only one value of a class attribute, and a class attribute can have a finite number of discrete, unordered values.

The classification algorithm learns on the basis of known classifications, ie. based on instances of objects whose classification is known. At the same time, based on the values of their attributes and class attributes, a set of rules is built on the basis of which the classification will be made later. Classification methods are most often based on decision trees, Bayesian classifiers, neural networks, etc. After learning, the model is tested ie. its accuracy is estimated, where by accuracy we mean the percentage of instances that are correctly classified. The class attribute value of each test instance is compared to the class attribute value determined from the model. Instances that were not used in the learning phase are used to test the model.

There are several ways to extract test instances, but most often they are extracted by random selection, before the learning phase, from instances whose classification is known. Moreover, if the accuracy of the model is satisfactory, then it is further used in the classification of objects whose class attribute value is unknown. There are the following criteria to compare and evaluate classification methods:

- Accuracy, which is the ability of a classifier to correctly classify an instance of an unknown class attribute value.
- Speed, which represents the number of operations performed during the construction and application of the classifier.
- Robustness, which represents the accuracy of the classifier when applied to noisy data or data missing values of some attributes.
- Scalability, which represents the efficiency of the method if applied to large amounts of data.
- Interpretability, which is a clear presentation and understanding of the results.

The results are validated using different classification algorithms. A wide range of classification algorithms are available, each with its own strengths and weaknesses. There is no such learning algorithm that works best for all supervised learning problems. Machine learning includes a large number of algorithms such as:

- artificial neural networks,
- probabilistic models,
- induction rules,
- decision trees,
- statistical or pattern recognition methods,
- k-nearest neighbors,
- Naïve Bayes classifiers and
- discriminant analysis.

In this work, the Naïve Bayes supervised learning algorithm was used to build the model. The advantage of the Naïve Bayes classifier is that it requires a small amount of training data to estimate the parameters needed for classification.

## 3. Methods of Bayes Classification Based on Probability

The probabilistic approach to knowledge induction presented in this paper assigns the probability of classifying instances into individual classes. Bayes' theorem is the basis of this probabilistic approach.

### 3.1. Bayes' theorem

Bayes' theorem enables the selection of the most likely hypothesis from the set of hypotheses  $H$  based on the learning set  $D$ , with the influence of predetermined probabilities of each of the offered hypotheses in the set  $H$ .

First, it is necessary to define the probabilities:

- $P(h)$  – the initial probability of the hypothesis  $h$ , which allows us to display the initial knowledge about the probabilities of different hypotheses. If we don't have that knowledge, we can add equal initial probability to all hypotheses.
- $P(D)$  – the initial probability of occurrence of instance  $D$ , which denotes the probability of occurrence of  $D$  regardless of which hypothesis is correct.
- $P(D|h)$  - conditions of the probability of occurrence of  $D$  with the condition of correctness of the hypothesis.
- $P(h|D)$  – the conditional probability of the correctness of the hypothesis  $h$  after the appearance of the instance  $D$ , and it is interesting from the point of view of knowledge induction because it enables the assessment of the correctness of the hypotheses after observing the appearance of new instances  $D$ .

This theorem allows us to calculate  $P(h|D)$  via the expression:

$$P(h|D) = \frac{P(D|h)P(h)}{P(D)} \quad (1)$$

In many problems it is necessary to find *the maximum a posteriori (MAP)* hypothesis, i.e. the most probable hypothesis  $h$  from  $H$  with the condition of occurrence of  $D$ . By applying Bayes' theorem to each hypothesis  $h$  from the set  $H$  and then choosing the most likely one, we easily calculate the MAP hypothesis:

$$h_{MAP} = \arg \max_{h \in H} P(h|D) = \arg \max_{h \in H} \frac{P(D|h)P(h)}{P(D)} = \arg \max_{h \in H} P(D|h)P(h) \quad (2)$$

In expression 2, we excluded  $P(D)$  because that probability represents a constant independent of  $h$ . If we assume that all hypotheses from the set  $H$  are equally likely, then we can ignore the influence of the parameter  $P(h)$  and then evaluate  $h_{MAP}$  only on the basis of  $P(D|h)$ . We call the hypothesis that maximizes  $P(D|h)$  ML (*maximum likelihood*) hypothesis:

$$h_{ML} = \arg \max_{h \in H} P(D|h) \quad (3)$$

Bayes' theorem is used a lot in classification problems. In this paper, a classification method called Naïve Bayes was used.

### 3.2. Naïve Bayes classifier

If we represent the classification as finding the most probable classification  $v_{MAP}$  then it can be calculated as follows:

$$v_{MAP} = \arg \max_{v_j \in V} P(v_j | a_1, a_2 \dots a_n) \quad (4)$$

In expression 4, the most probable element of the final set  $V$  of all possible classifications of the input instance is given. If we represent each instance as a set of attribute values, and if a set of training instances is known which is also defined by the same set of attributes, then the previous expression can be written as:

$$v_{MAP} = \arg \max_{v_j \in V} P(v_j | a_1, a_2 \dots a_n) \quad (5)$$

$$v_{MAP} = \arg \max_{v_j \in V} \frac{P(a_1, a_2, \dots, a_n | v_j) P(v_j)}{P(a_1, a_2, \dots, a_n)} \quad (6)$$

$$v_{MAP} = \arg \max_{v_j \in V} P(a_1, a_2, \dots, a_n | v_j) P(v_j) \quad (7)$$



Based on the training data, we calculate the value of the expression. The problem with the calculation of expressions  $P(a_1, a_2, \dots, a_n | v_j)$  arises from the mutual dependence of the attribute values so that the number of possible expressions is equal to the number of all possible distinct  $n$ -tuples  $\{a_1, a_2, \dots, a_n\}$  multiplied by the number of all possible classifications. Each example needs to be seen in the input set many times in order to reliably estimate the required probabilities.

This classifier introduces a simplification in the form of assumed mutual independence of attribute values in  $n$ -tuples  $\{a_1, a_2, \dots, a_n\}$  so that the expression can be written as:

$$P(a_1, a_2, \dots, a_n | v_j) = \prod_i P(a_i | v_j) \quad (8)$$

We can write the expression for classification by the Naïve Bayes classifier as follows:

$$v_{NBj} = \arg \max_{v_j \in V} P(v_j) \prod_i P(a_i | v_j) \quad (9)$$

In this case, the number of different probabilities to be calculated from the training data is the number of different attribute values multiplied by the number of different possible classifications, which is a much smaller number than the number needed to obtain the probability  $P(a_1, a_2, \dots, a_n | v_j)$ .

In real situations, the independence condition assumed is relatively strict and can be a problem, but in practical use the Naïve Bayes classifier has shown its usefulness due to its simplicity of implementation and satisfactory results. If indeed all the observed attributes are independent, the Naïve Bayes classification  $v_{NBj}$  is equal to the classification  $v_{MAP}$ .

As an example of using the Naïve Bayes classifier, we can consider the case of going for a walk:

*If Weather.Sunny and Temperature.Cold and Windy.Yes and Humidity.High,  
then Go for a walk.YES (0.1) and Go for a walk.NO (0.9).*

The probabilistic approach to knowledge discovery assigns the probability of classifying instances into individual classes, where 0.1 is the probability for *Go for a walk.YES*, and 0.9 for *Go for a walk.NO*. In this case, it is a binary classification, where the sum of the probabilities for *Go for a walk.YES* and for *Go for a walk.NO* is equal to 1. The probability is determined by frequency interpretation and observing each attribute independently, which represents the assumption of "naivety".

### 3.3. Advantages and disadvantages of classification based on Naïve Bayes classification

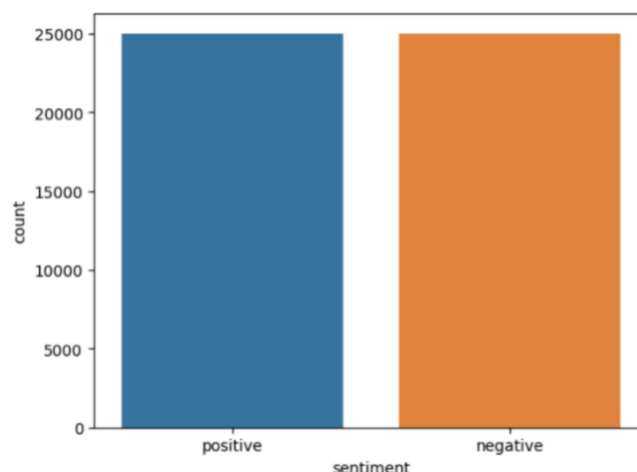
The Naïve Bayes classifier is a very fast classifier, suitable for classification because it has low memory requirements. It is a simple statistical learning scheme and is very often used in classification problems, and is sometimes more successful than many more complex approaches. It is robust to irrelevant data, as they will cancel each other out, and it has also performed well in domains where there is a large amount of equally relevant data. This classifier is optimal if the assumption of data independence is true. We can conclude that the Naïve Bayes classifier has the following properties :

- low memory requirements,
- fast training and fast learning,
- simplicity,
- it often works surprisingly well.

## 4. Data Set for Analysis and its Preprocessing

Emotions play a key role in human communication. The ability to automatically recognize emotions from text has many practical applications, such as sentiment analysis, social media monitoring, and customer feedback analysis.

The data set downloaded from <https://www.kaggle.com/datasets/lakshmi25npathi/imdb-dataset-of-50k-movie-reviews> was used for this research. The dataset contains two columns: the first with the 50K comments for the movie and the second with a label for the corresponding sentiment which can be positive or negative. There are 49.6k unique values in the first text column. The sentiment shown in the second column in the set of observed data has an even distribution: an equal number of positive and negative comments (Figure 1). The data set has no missing values.



**Figure 1.** Number of positive and negative comments

For the recognition of text sentiment, data preprocessing is a particularly important step, so that machine learning algorithms can better process the text (Cen *et al.*, 2020). We applied several different preprocessing methods to the data set, namely: converting to lowercase letters, removing stop words, removing unwanted characters and tokenization.

Convert to lowercase converts all case-based characters in a string to lowercase characters. In order to avoid different interpretation of tokens with the same meaning, all uppercase letters are changed to lowercase.

One of the main forms of preprocessing is filtering out useless data. In natural language processing, useless words (data) are called stop words. A stop word is a commonly used word (such as "the", "a", "an") that the search engine is programmed to ignore, both when indexing search entries and when retrieving them as search results. Stop words are a set of words that are often used in a language. The idea is that by dropping stop words, words with low information are removed from the text so that the algorithm can focus on important words (Matović, 2021).

We can do the removal by storing a list of words that we think are stop words. In the paper we removed stop words using NLTK (natural language tool) in Python which has a list of stop words of different languages. To check the list of stop words, we can type the following command in Python.

```
import nltk
```

```
from nltk.corpus import stopwords
```

```
print(stopwords.words('english'))
```

```
{'ourselves', 'hers', 'between', 'yourself', 'but', 'again', 'there', 'about', 'once', 'during', 'out', 'very', 'having', 'with', 'they', 'own', 'an', 'be', 'some', 'for', 'do', 'its', 'yours', 'such', 'into', 'of', 'most', 'itself', 'other', 'off', 'is', 's', 'am', 'or', 'who', 'as', 'from', 'him', 'each', 'the', 'themselves', 'until', 'below', 'are', 'we', 'these', 'your', 'his', 'through', 'don', 'nor', 'me', 'were', 'her', 'more', 'himself', 'this', 'down', 'should', 'our', 'their', 'while', 'above', 'both', 'up', 'to', 'ours', 'had', 'she', 'all', 'no', 'when', 'at', 'any', 'before', 'them', 'same', 'and', 'been', 'have', 'in', 'will', 'on', 'does', 'yourselves', 'then', 'that', 'because', 'what', 'over', 'why', 'so', 'can', 'did', 'not', 'now', 'under', 'he', 'you', 'herself', 'has', 'just', 'where', 'too', 'only', 'myself', 'which', 'those', 'i', 'after', 'few', 'whom', 't', 'being', 'if', 'theirs', 'my', 'against', 'a', 'by', 'doing', 'it', 'how', 'further', 'was', 'here', 'than'}
```

You can also modify the list by adding words of your choice in the corresponding file that already contains stop words. We used all the stop words mentioned in the paper, without any changes. We removed unwanted characters that do not affect the semantics of the text by removing all characters except a-z, A-Z, and 0-9.

Word tokenization is the process of representing text as a list of tokens. In this paper, sentences are divided into word-level tokens, so the sentence "I love the actors in this film" will be represented as the following list of tokens ["I", "love", "the", "actors", "in", "this", "film"].

## 5. Experimental Research and Analysis of Results

For the purposes of experimental research, the open source software Jupyter Notebook and the Python programming language were used. The Python programming language is often used to write code for artificial intelligence purposes. We used TensorFlow as an open source library for developing and training machine learning models.

In this paper, we investigated the performance of the Naïve Bayes classifier in text sentiment analysis. We have chosen Multinomial Naïve Bayes classifier which belongs to Naïve Bayes classifiers. The Multinomial Naïve Bayes classifier is

one of the most popular classifiers used in text analysis. This classifier based on a probabilistic approach to knowledge induction is most often used in Natural Language Processing (NLP).

Naïve Bayes is really a very fast classifier, because it has low requirements regarding the use of CPU and memory. Multinomial Naïve Bayes classifier is optimal if the assumption of data independence is true, which was fulfilled in our case. Also, it performed fast training and fast learning on the training data set.

In the paper, we used the following metrics to evaluate the success of the classifier:

- classification accuracy,
- precision,
- recall,
- the area under the ROC curve (Area Under the Curve - AUC),
- confusion matrix.

		ACTUAL VALUE	
		Yes	Not
PREDICTED VALUE	Yes	A real positive	False positive
	Not	False negative	A true negative

Figure 2. Display of values in the confusion matrix

Figure 3 shows the values of the Multinomial Naïve Bayes classifier for classification accuracy, precision, recall, area under the ROC curve and confusion matrix. With this classifier, the classification accuracy is 86.413%, the precision is 90.343%, the recall is 81.373%, the area under the ROC curve has a value of 0.94. Also, based on the confusion matrix (Figure 2 and Figure 3), we see good results for the number of correctly and incorrectly classified sentiments of the text. The number of a real positive sentiments is 3676, while the number of tru negative sentiments is 3237. The number of false positive sentiments is 346, while the number of false negatives is 741.

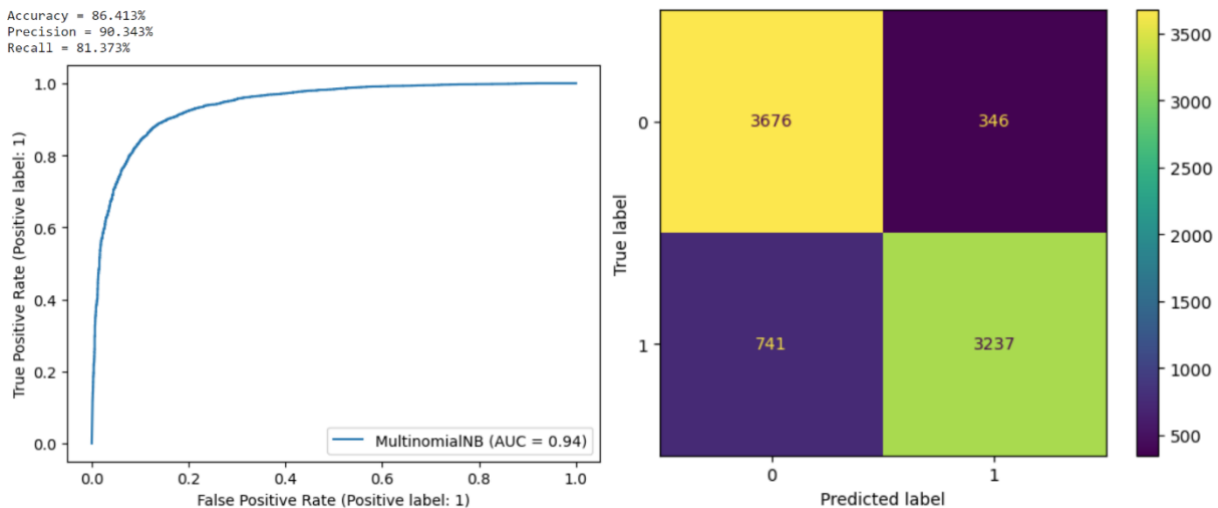


Figure 3. Display of the results for evaluating the success of the Multinomial Naïve Bayes classifier

## 6. Conclusion

This paper discusses the problem of sentiment analysis of textual data using the Multinomial Naïve Bayes classifier. The Multinomial Naïve Bayes classifier is one of the most popular classifiers used in text analysis. This classifier based on a probabilistic approach to knowledge induction is most often used in natural language processing. It has been shown during the experiment that Multinomial Naïve Bayes is indeed a very fast classifier, as it has low requirements in terms of CPU and memory usage. Multinomial Naïve Bayes classifier is optimal if the assumption of data independence is true, which was fulfilled in our case. In the paper, we used the following metrics for the success of the classifier: classification accuracy, precision, recall, area under the ROC curve and confusion matrix. In our further research on the sentiment analysis of

textual data, we will use other machine learning models in order to obtain the highest classification accuracy and the least losses.

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# Game Theory as the Foundation of Strategic Management

## Теорија Игара Као Темељ Стратешког Менаџмента

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### Abstract

Economics deals with various aspects of problems of production, banking and market operations, economic aspects of growth, development, price of goods or services, it is closely related to strategic business and business management such as. In this way, a special connection is made between these sciences, which study the social benefit with the use of available resources to produce good and service in order to better satisfy the need and make a profit. In such a broadly understood aspect of economics and strategic management, mathematics as an application of science finds its foothold in individual interpretations that should be sought in mathematical models, calculations and theories of perception. Especially in the period of the 20th century, the use of mathematical calculations is used in these sciences, when overall economic growth on a global level began, as well as scientific research based on statistical data. Thus, statistics is classified as a high-priority mathematical model applicable in the field of economics and strategic management, and next to it, game theory plays a significant role as a mathematical procedure.

*Keywords:* economics, strategic management, mathematical models in economics. game theory.

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### Резиме

Економија бавећи се са различитих аспеката проблемом производње, банкарског и тржишног пословања, економским аспектима раста, развоја, цене роба или услуга, умногоме је повезана са стратешким пословањем и менаџментом као носицем пословних активности. На тај начин се ставра посебна спрега ових наука, које проучавају друштву корисност уз коришћење расположивих ресурсе да би производили добра и услуге како би што боље задовољили потребе и оствариле профит. У овако широко схваћеном аспекту економије и стратешког менаџмента, математика као примењена наука налази своје упориште у појединим интерпретацијама које нужно траже математичке моделе, прорачуне и теорије сагледавања. Посебно се у периоду 20. века употреба математичких прорачуна користи у овим наукама, када је и кренуо укупан економски раст на глобалном нивоу али и научна истраживања базирана на статистичким подацима. Тако се статистика сврстава у веома приоритетне математичке моделе применљиве у област економије и стратешког менаџмента, а поред ње другу значајну улогу има теорија игара као математички поступак.

*Кључне речи:* економија, стратешки менаџмент, математички модели у економији. теорија игара.

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## 1. УВОД

Теорија игара, која је развијена у оквиру економије и математичке теорије игара, може да има значајну улогу у стратешком менаџменту. Она се фокусира на пручавање интеракција између различитих играча и доношење одговора на проблеме које они сусрећу.

У контексту стратешког менаџмента, теорија игара може да помогне у анализи и предвиђању понашања конкуренције, доношењу стратешких одлука и управљању ризицима. Она пружа алате и концепте за проучавање сложених ситуација у којима различите стране имају интересе који су у сукобу или су међусобно повезани.

У свом најширем контексту, теорија игара прати неизвесност у одлучивању кроз интеракцију са различитим субјектима, а истовремено тражи одговор за најбољу стратегију за сваког појединца у датој ситуацији, чиме се и њена улога у стратешком менаџменту посебно може издвојити. Како је сам стратешки менаџмент у посебној интеракцијској вези са економијом, у домену међусобног деловања ради остварења економске добити, повезаност ове три области пословања у оквиру сваке организације је од великог значаја.

## 2. ОСНОВНА КОНЦЕПЦИЈА ТЕОРИЈЕ ИГАРА

Живимо у ономе што би се могло назвати развијеном добу теорије игара, у којој је теорија игара постала утицајна у све већем броју различитих научних дисциплина. Теорија игара је сада стандардно средство у политици. На пример, аутори McCarty и Meierowitz, дају преглед о томе како се теорија игара може користити за испитивање односа између земаља, понашања политичких странака, изборног понашања, рад законодавних тела, лобирање и других политичких прилика<sup>1</sup>. Када се сагледава однос теорије игара и политичке економије, обично се економисти надовезује на став Elinor Ostrom, добитнице Нобелове награде за економију 2009. године, о управљању заједничким добрима<sup>2</sup>.

Теоријска анализа игара је сада уобичајена у праву. Теорија игара појављује се у проучавању филозофије, посебно етике, позната је и у теорији игара о друштвеном уговору, на темељима изучавања моралних норми, и о еволуцији промена друштвене структуре. Психолози, посебно експериментални психолози, окренули су се теорији игара, а значајна је примена теорије игара и у биолошким наукама, као и неуропсихијатри<sup>3</sup>. Теоријски модели игре посебно су значајни у биологији. Посебно је упечатљива примена теоријске анализе игре две популације пустињског паука<sup>4</sup>.

Под маском алгоритамске теорије игара, теорија игара се проширила кроз компјутерску науку. Теорија игара је постала стандардно оруђе у електротехници и учењу о бежичним мрежама. Теорија игара је имала утицаја у истраживању различитих врста природних операција, то се види у учесталости радова из теорије игара у истраживању операција и математичких истраживања, а тиме се уврстила теорија у области образовања, као што су рачуноводство и маркетинг.

Промене у самој примени теорије игра се стално мењају, чиме се њена примена све више шири и добија на значају. У економској теорији значајно се користи теорија игара, а предавања о овој теорији су честа на студијама економије, где се учвршћују у уобичајени наставни програм. Овај помак од повезивања теорије игара са математиком до економије огледа се у часописима. Након појављивања Међународног часописа о теорији игара 1971. године, следећи часопис посвећен теорији игара био је *Игре и економско понашање*, који је први пут издат 1989. године, а у свом наслову је управо имао и назив економија - Journal of Games and Economic Behavior<sup>5</sup>.

Често се поставља питање потребе коришћења теорије игара у економији. С једне стране, интеракција између економских апликација и основних резултата у теорији игара била је посебно плодна.

Теорија игара као област примењене математике, први пут се среће код грчких филозофа и примењивана је у области трговине. Затим се, њен развој бележи у XVIII веку, и тада је најчешће примењивана у аналитичкој концепцији карташких игара. Званично, теорија игра је значајно почела да се развија у току 20. века<sup>6</sup>.

Овако конципирана, теорија игара је своју примену нашла у многим научним дисциплинама из домена природних и друштвених наука. Тако се на пример она користи у математици, политици, социологији, медицини, војним наукама, биологији и економији.

Максимизација профита као основни циљ сваке компаније дефинише и основни концепт економије као друштвене науке, али и стратешког менаџмента, при чему се међусобни однос појединца и компаније посматра као кључна спона остварења циља уз максимизацију профита а ефикасно и стратешко коришћење ресурса.

<sup>1</sup> McCarty, N., & Meierowitz, A. (2007). *Political game theory: an introduction*. Cambridge University Press.

<sup>2</sup> Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge university press.

<sup>3</sup> Капо, П. (2017). Теорија игара: системски приступ и развој, *Мегатренд ревија*, Вол. 14, бр.1, 253-282.

<sup>4</sup> Mesterton-Gibbons, M., & Adams, E. S. (1998). Animal contests as evolutionary games: paradoxical behavior can be understood in the context of evolutionary stable strategies. The trick is to discover which game the animal is playing. *American Scientist*, 86(4), 334-341.

<sup>5</sup> Erickson, P. (2019). *The world the game theorists made*. University of Chicago Press.

<sup>6</sup> Капо, П. (2017). Теорија игара: системски приступ и развој, *Мегатренд ревија*, Вол. 14, бр.1, 253-282.

У свом даљем развоју, а условљеношћу друштвеним променана и структуром, стратешки менаџмент је мењао свој начин изражавања али није мењао основну, применљиву и практичну суштину деловања. Као значајна област, која добија и свој научни карактер за друштвени развој, условљена је, и у сталном међусобном прожимању са другим наукама, како друштвеним, тако и природним и примењеним. Можда се највеће прожимање види у њеном односу са математиком и математичким моделовањем економског пословања<sup>7</sup>.

### 1.1. Економско моделовање стратешког менаџмента

У данашње време, иако је у многим аспектима економија зависна од математике, постоје и друга гледишта у којима се показује извесна сумња у њену значајну улогу. Зато неки теоретичари сматрају да економија треба да се базира на посматрању и емпиријској анализи која је фундаментална у односу на математичке моделе<sup>8</sup>. Иако је у многим досадашњим теоријским и емпиријским разматрањима указано на повезаност ове две науке, свакако морамо знати да се оне изузетно међусобно разликују у суштинском смислу јер је економија друштвена наука где је централно место дато управо људском фактору, док математика своју практичну страну базира на чињеницама, егзактним прорачунима где је људска страна као утицајни фактор искључена. Рационалност и објективност у сагледавању ових наука и њиховог међусобног утицаја треба да се креће у делу где су јасни и прецизни подаци неопходни за даљи напредак и где су аналитичке и статистичке обраде смернице за даљи друштвени напредак човечанства. Уловно повезано са таквим међусобним утицајем, развија се и сама свест о директној повезаности са стратешким менаџментом који короршћењем резултата економије и математике, даје смернице за позитивни развој предузећа и на неки начин отвара ноу перспективу развоја менаџерског пословања за будућност<sup>9</sup>.

У економији се као битна ставка поставља само дефинисање проблема, које је веома често отежано због утицаја непредвидљивих људских фактора где математички модел не може да утиче јер математика полази од јасних и дефинисаних појмова који користе као прорачунски алат. Све док економски проблем не буде прецизно издвојен, са јасним показатељима и мерљивим величинама, математика у економији није применљива. Зато се предходно раде детаљне анализе, изводи правилан след догађаја и резултата, где стратешки приступ менаџмента има зналајну улогу у својим анализама а након тога се математички модел узима као применљив у теоријском и егзактном облику. У било ком облику да се посматра, да ли као неопходна везаност математике и економије или као однос базиран на погрешним економским моделима када се помоћу математичких модела долази до нералних решења, треба знати да је приказ економског стања, уз подршку стратешког приступа, који има улогу и усмеравање на могућност економског раста, применљив математички модел и да је од великог значаја за развој економских наука<sup>10</sup>.

Без обзира на различите теорије и мишљења која владају у научним круговима о односу математике и економије, са једне стране и стратешког менаџмента са друге стране, данас смо сведоци да су многа софтверска решења која се користе у области економије базирана су на математичким моделима израчунавања података, која су стратешки конципирана, као и да се многа истраживања базирају на математичким прорачунима која дају резултате у отварању просперитета компаније и унапређују њихово пословање уз повећан профит а што је резултат стратегије коју развија компанија<sup>11</sup>.

У посматраном односу и дефинисању математике и економије треба бити веома прецизан у разграничењу ових наука и њихов однос схватити крајње обазриво, посебно ако се стављају у коорелационом односу са стратешким менаџментом, јер утицај је неспоран али се са применом морају предходно јасно одвојити и детаљно испитати сви предходни, спољашни или унутрашњи фактори, како би се на основу јасних чињеница и посебно издвојених економских модела могао применити математички модел израчунавања стратешког приступа.

## 2. КЉУЧНИ КОНЦЕПТ ТЕОРИЈЕ ИГАРА У СТРАТЕШКОМ МЕНАЏМЕНТУ

Кључни концепти теорије игара који имају примену у стратешком менаџменту укључују<sup>12</sup>:

*Игре са нултим збиром:* Ово су игре у којима добитак или губитак једне стране не утиче на добитак или губитак друге стране. Анализа игара са нултим збиром може помоћи у доношењу одлука у ситуацијама у којима су интереси различитих играча у сукобу. Игре са нултим збиром су тип игара у којима укупан збир добитака и

<sup>7</sup> Павличић, Д. (2010). *Теорија одлучивања*, Београд, Економски факултет.

<sup>8</sup> Vovk, O., Tulchynska, S., Popelo, O., Tulchinskiy, R., & Tkachenko, T. (2021). Economic and Mathematical Modeling of the Integration Impact of Modernization on Increasing the Enterprise Competitiveness. *Management Theory and Studies for Rural Business and Infrastructure Development*, 43(3), 383-389.

<sup>9</sup> Teece, D. J. (2019). A capability theory of the firm: an economics and (strategic) management perspective. *New Zealand Economic Papers*, 53(1), 1-43.

<sup>10</sup> Saloner, G. (1991). Modeling, game theory, and strategic management. *Strategic management journal*, 12(S2), 119-136.

<sup>11</sup> Ross, D. G. (2018). Using cooperative game theory to contribute to strategy research. *Strategic Management Journal*, 39(11), 2859-2876.

<sup>12</sup> Samuelson, L. (2016). Game theory in economics and beyond. *Journal of Economic Perspectives*, 30(4), 107-130.

губитака свих играча је нула. Односно, када један играч освоји одређену корист, други играчи искључиво претражују губитак. У овим играма, ниједан играч не може победити или изгубити на рачун других играча.

Анализа игара са нултим збиром може бити корисна у стратешком менаџменту јер пружа увид у ситуације у којима су интереси различитих играча у сукобу. Овакве игре се често примењују за моделирање конкурентних ситуација, где је битно разумети како одлуке једног играча утичу на добитак других играча.

Анализа игара са нултим збиром укључује примену различитих концепата и алатки, као што је стратегија доминантних стратегија и слично. Она може помоћи у идентификовању најбољих стратегија за сваког играча, како би се постигла жељена резултата у ситуацијама конфликта интереса. Анализа игара са нултим збиром је корисан алат за доношење одлука у ситуацијама конфликта интереса у стратешком менаџменту, где је битно претходно разумети последице сваке одлуке за све играче укључене у игру.

*Доминантна стратегија:* Доминантна стратегија је она стратегија коју играч треба да изабере независно од избора других играча, зато што му обезбеђује најбољу могућу резултате без обзира на акције других играча. Уколико играч има доминантну стратегију, то значи да је та стратегија оптимална за њега, ма шта други играчи изабрали.

Анализа доминантних стратегија је значајан алат у стратешком менаџменту јер омогућава играчима да препознају и одаберу најбољу стратегију без обзира на акције конкуренције. Када играч има доминантну стратегију, то му пружа предност и утврђује оптималан начин поступања.

Пример доминантне стратегије је ситуација у којој компанија има две могуће акције: да улаже више у истраживање и развој или да улаже мање. Ако анализа показује да је више улагање у истраживање и развој доминантна стратегија, компанија би требало да је изабере, без обзира на одлуке других играча у тржишту.

Ова анализа доминантних стратегија је корисна у стратешком менаџменту јер помаже играчима да идентификују најбоље стратегије независно од акција других играча. То им пружа предност у превазилажењу конкуренције и постигнућу жељених резултата.

## 2.1. Применљивост принципа теорије игара

Базирана на оваквим обележјима теорија игара има своје основне принципе а то су: игра и играчи, правила, потези/акције, стратегија, исход и исплата<sup>13</sup>:

- Игра и играчи – игра је активност у којој су учесници играчи чији су интереси различити, а могу бити два или више учесника. У економској сфери то може бити олигопол, дуопол и предузеће у монополистичкој конкуренцији. У тој игри постоји сукоб интереса, свако развија своју стратешку борбу где постоје правила која описују формалну структуру игре и ту су сублимирани различити потези где играчи имају делимичну а не потпуну контролу.

- Правила – то су поступци који дефинишу игру и услове учешћа у самој игри, као и дозвољене стратешке поступке због конфликтних ситуација. У економији су конфликтне ситуације врло сложене и често се поставља питање како то решити кроз примену теорије игре.

- Потези/акције – то су сами поступци који се у току игре приказују као акције од стране учесника игре, односно играча. Потезима игра напредује, постављају се прави односи положаја и снага, игра напредује и прати се сам исход игре.

- Стратегије – то је специфичан ток акција а не представља општи приступ игри. У теорији игара то је унапред дефинисани скуп околности које се могу појавити. Постоји чиста стратегија која у потпуности дефинише начин на који ће играч одиграти игру и мешовита стратегија која сублимира неке чисте стратегије и то поступком случајног одабира.

- Исходи – то је резултат комплетних стратешких поступака свих играча и крајњи резултат на основу понуђених могућности.

- Исплата - представља оно што ће се дешавати на крају игре. Исплата, на крају игре, може бити победа или пораз, добитак или губитак, али оно што је важно у теорији игара, сматра се да ће сваки играч давати већу предност вишој исплати него нижој, а у томе се и огледа и суштина рационалности учесника.

Ови наведени принципи говоре да играчи морају рационално да предвиђају потезе и намере осталих учесника игре чиме ће бити у прилици да својим деловањем издејствују најбоље резултате.

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<sup>13</sup> Ross, D. G. (2018). Using cooperative game theory to contribute to strategy research. *Strategic Management Journal*, 39(11), 2859-2876.



## 2.2. Индивидуални стратешки приступ и рационални избор

Као веома важан методолошки фактор како у економској науци тако и стратешком менаџменту, јесте управо рационални избор, који се у својој суштини ослања на људски, односно индивидуални фактор у људском понашању, где сусуштинску одредницу управо чини теорија одлуке<sup>14</sup>. Међутим, и ако у случају рационалне теорије избора људски фактор има одлучујућу улогу, што отежава математичко моделовање, ова теорија може у неким сегментима да буде математички приказана, а пре свега кроз преференцију и применљивости код потрошача са претпоставком рационалности.

На самом почетку развоја економије као науке, она је била заснована на неокласичној квантитативној анализи. Пратећи њен историјски развој наилазимо да све више укључује теорију игре која је значајно обогаћује у домену егзактности и анализи стратешких циљева. Са полазишта теорије игара, која не тежи да се бави унутрашњим релацијама предузећа, тражећи одговоре на питања о самој постављеној улози предузећа на глобалном плану, она се бави чињеницама зависности понашања предузећа у односу на стратегију пословања. То је ново схватање које разликује теорију игара и од технолошких и од институционалних парадигми<sup>15</sup>. Овако схваћена улога теорије игре у економији и стратешком менаџменту, значи да не постоје јасно прецизирана правила и модели понашања предузећа, већ се тежи идентификовању конфликтних ситуација у посматраној ситуацији. Индивидуални моменат има само једну од улога у преговарачким поступцима, основа јесте реално одређење конфликтних момената.

Савремена економија и стратешки менаџмент, анализирају уз комбиновање различитих фактора сваки добијени резултат пословања предузећа, што у једном тренутку доводи до подстицајног момента у одређењу даљих циљева и одлука у односу на неке сегменте као што су цене, надogradња образовних и техничких капацитета или однос према конкуренцији. Практична примена стратешког и економског промишљања је веома сложен процес јер се сукобљава велики број интересних сфера, повећава ризик пословања а неизвесност је увек присутна. У таквим ситуацијама сви учесници, односно играчи, имају своју улогу у доношењу одлука јер свако преко конкурентског понашања предвиђа своје даље стратешке кораке. Рационални моменат је увек присутан и ако је моменат неизвесности доминантан у сваком кораку. Циљани задатак теорије игре у економији кроз стратешки менаџерски пристуо, јесте повећање добити, односно профита, који ће дати сигурност и успех предузећу. Тако, теорија игара покушава да реши функционалну повезаност између изабраних стратегија појединих играча и њиховог тржишног резултата, добити или губитка, у свим ситуацијама ограничене рационалности<sup>16</sup>. Разматрајући концепцију теорије игре у економским и стратешким наукама, намеће се један од кључних момената а то су информације о стварности које морају да буду потпуне јер од тога управо зависи даљи однос играча, вероватноћа успеха и примена свих принципа и стандарда теорије игре.

У оквиру тржишног пословања, постоје различита привредна предузећа која заједнички утичу на конкуренцију на одређеном тржишту, јер својим пословањем могу контролисати цене и стварати велике профите, а све то даје једну нову структурну форму која се зове олигопол.

Карактеристике олигополског тржишта су да на њему постоји само неколико предузећа и да је улазак нових предузећа ограничен (због велике економије обима) (Костић, 2009/1, стр. 33-35). Према дефиницији «олигопол је облик несавршене конкуренције у којој неколико предузећа учествују у целокупној понуди» (Пар и Бобић, 2016, стр. 35). Различити су односи на овом тржишту, од потпуне сарадње, односно кооперације, до одбацивања сваког вида сарадње у смислу агресивне конкуренције. То се показује у пракси као веома негативна компонента, јер редовно води мањем профиту. Свакако, свака донешена одлука на овом тржишту мора да прати сегмент праћења реакције конкурената.

## ЗАКЉУЧАК

Постоје две стратегије које су погодне за решавање многострукости модела. Један је да се концентришемо на специфичну уску индустрију или догађај, а други да прикажемо моделе за снажна предвиђања. Прво је до сада доминирало истраживањем, други ће се, надамо се, показати плодноним у будућности. Избор предвиђања за класе модела треба да се примене за области као што су спајање, профитне разлике, раст предузећа итд. Користећи различите концепте за варијабле, различите спецификације за функционалне форме, тестирање интервентних варијабли, инструментирање за ендегеност и реплицирање емпиријских стратегија за различите индустрије и различите земље, помоћи ће у тестирању идеје, када се теоријски концепти и емпиријски подаци разликују. Споне

<sup>14</sup> Merigó, J. M. (2015). Decision-making under risk and uncertainty and its application in strategic management. *Journal of Business Economics and Management*, 16(1), 93-116.

<sup>15</sup> Collins, C. J. (2021). Expanding the resource based view model of strategic human resource management. *The International Journal of Human Resource Management*, 32(2), 331-358.

<sup>16</sup> Rass, S., & Schauer, S. (2018). Game theory for security and risk management. *Springer International Publishing*. doi, 10, 978-983.

између модела варијабилних варијација и динамичких модела ће се посебно показати као охрабрујући за будућа истраживања.

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# The Impact of Digital Transformation on Business Processes and User Experience

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## Abstract

Digital transformation has become an inevitable and necessary process in the digital age in which we live. The development of new technologies, software and applications affects the way of doing business, the establishment and maintenance of communication with consumers, as well as the specific features of competition in the market. This paper analyzes the impact of digital technology on business processes, and business culture, as well as on the user experience that exceeds expectations and forms the basis for gaining a competitive advantage. Secondary research was conducted based on a review of the most relevant literature and experiences of companies in the subject matter. Research results show that today digital transformation is a continuous process, which leads to the growth and development of business in any industry.

*Keywords:* digital transformation, digital technologies, competitive advantage, consumer, way of doing business, user experience

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## 1. Introduction

The development of modern information and communication technologies has posed a challenge for businesses to transform their business processes, establish new ways of interacting with consumers, enhance their innovative capabilities, create value, develop new market entry strategies, all of which reflect on business performance. Digital transformation is no longer a voluntary choice for companies to implement but has become a necessary and essential prerequisite for business operations. The goal of digital transformation is not just the reengineering of business processes but the creation of organizational changes through the synergy of information, computing, communication technologies, and connectivity technologies. The COVID-19 pandemic has significantly accelerated the process of digital transformation. New digital forms such as live broadcasting, online office and online learning brought about by the epidemic have been subtly integrated into social production and life, forcing enterprises to adapt to the trend of the digital economy era, accelerate the transformation of digital operation mode, improve production efficiency, and maintain long-term market competitiveness (Guo, 2023).

The digital transformation represents a process of a unique evolution within an organization that involves changes in people, processes, technology, and data analysis. The focus of digital transformation is on the user experience. Modern information and communication technologies influence the changing needs, motives, attitudes, and preferences of consumers. Consumers are becoming increasingly demanding due to faster and easier access to information, allowing them to simultaneously review product characteristics, compare prices, and gain insight into consumer reviews before making a purchasing decision. Today's sophisticated consumers expect the best user experience, and anything contrary to that leads them towards competitive offerings. The focus is on the quality of the user experience rather than the quality of a product that satisfies their needs. As one of the critical elements of digital transformation, customer centricity manifests itself in anticipating and shaping customer expectations, managing the customer journey and creating customer communities that communicate market value (Czerska, 2023).

## 2. Literature review

„From the perspective of strategic transformation, digital business strategy goes beyond traditional IT strategy. It is an organizational strategy that uses digital resources to create differentiated value, emphasizing the integration of IT strategy and business strategy“ (Wu, 2023). Digital transformation facilitates information transfer, information exchange, and information integration among departments, and enhances the information transparency of companies (Lei, Wang, 2023). The application of digital technology processes and integrates integrated business information to provide valuable semi-

structured information for corporate decision making (Wang, 2023). Today, management is increasingly noticing that investing in digital transformation and accepting agile and digital processes is the basis for the survival and development of organizations in the future (Obradović, Todorović, Toljaga-Nikolić, 2022). *Digital* transformation introduces strategy — and customer-focused changes through innovative information and communication technologies (Czerska, 2023).

Digital transformation can also promote the transformation of enterprises from the traditional production-oriented production mode to the data - and user-oriented production mode, and realize the intelligent, networked collaboration and personalized service of production, sales and service through digital technology, so as to meet the personalized and diversified needs of customers and accelerate the innovation of products and services (Guo, 2023). Thus, the digital transformation process represents the innovative use of digital technologies to provide better offerings to customers, design efficient operations or create new revenue streams for the business (Czerska, 2023). By using new technologies, it is possible to establish close relationships with clients and quickly react to new requirements, as well as to increase process efficiency through automation, and many other advantages (Obradović, Todorović, Toljaga-Nikolić, 2022). The technologies used in the transformation process may not be new, but their innovative combination here matters (Czerska, 2023). Although there are various types of barriers hindering the transition and creation of digital transformation, those related to the digital competencies of staff might be among the key obstacles (Uzule, Verina, 2023). However, on the other hand, they should provide regular testing and training of digital competencies staff due to the rapid and complex development of digital technologies (Uzule, Verina, 2023).

Digital maturity refers to the level of an organization's digital capabilities and how well it can leverage technology to achieve its goals (Nazarova, Rudenko, 2023). The technology works because of “people”, “procedures”, “culture” and “mentality”; the digital transformation is a people thing, not a process (Sreenivasan, Suresh, 2023). As part of the efforts in implementing digital transformation in the organisation, the organisational top management is encouraged to enhance the digital literacy among their employees by adopting favourable digital organisational culture and transformational leadership management style (Ling, Cheng, Ling, Sin, Li, 2023).

In the near future, the competitiveness of companies will be determined by the level of their digitalization (Lozynska, Kryshstal, Drinke, Lych, Kulikov, Panin, 2023). Digital technology as a new channel of information or interaction with customers and other stakeholders, affecting business processes, bringing unlimited opportunities for business model innovation, in order to greater productivity, more competitive, thus enhancing the business model innovation can be, accelerating the process of business model innovation (Chen, 2023). Thus, digital transformation improves information transparency within the company, which facilitates management to make optimal labor employment decisions and discourages inefficient investments, supporting companies to improve total factor productivity (Lei, Wang, 2023). Due to having lack of financial and qualified human resources, small firms can feel more concerned about their workers' digital literacy compared to larger firms that feel more confident and motivated to implement digital technologies (Krajčík, Novotný, Civelek, Semrádová Zvolánková, 2023).

### 3. Research method

The research was conducted based on secondary data collected from relevant scientific journals, books, and official documents, covering the period from 2020 to 2023. The goal of the research is to identify the key dimensions of the digital transformation process, its role and significance, as well as barriers to the implementation of this process.

### 4. Results and discussion

Digital technology enables an increased focus on user experience. Databases containing information about consumers' previous transactions allow businesses to create strategies to enhance the customer experience through the capabilities of in-depth analysis of consumer behavior. The application of sophisticated data analysis methods from the database provides a detailed insight into the behavior of individual consumers, leading to a better understanding of their needs and expectations. In conditions of intense competition and increasingly demanding consumers, with faster access to information, the ability to compare offers, etc., the purpose of focusing on the consumer and their user experience goes beyond the goal of ensuring consumer satisfaction for businesses. Instead, it focuses on creating loyalty programs for consumers.

Digital transformation has provided new forms of communication, establishing the foundation for building long-term and profitable relationships with consumers. Social media, mobile applications, and various digital platforms offer businesses faster feedback on consumer preferences. This information is crucial for creating a personalized offer, leading to strengthened consumer preferences and providing a basis for building consumer loyalty. Certainly, a personalized approach in creating and delivering offers forms a strong foundation for enhancing the customer experience and ensuring consumer loyalty. Loyal consumers are likely to recommend the company and its offerings. Through in-depth data analysis contained in the database, a more comprehensive understanding of consumer preferences is achieved, enabling quick responses and offering specific solutions to consumers. This personalized approach, aided by digital technologies, contributes to the creation of a superior customer experience, often a priority for building complete loyalty to a given brand. All of this leads

to the improvement of the customer experience, and when successfully combined, it provides the opportunity for a company to secure a leadership position in the digital business environment. Artificial intelligence enables the company to provide relevant recommendations to consumers and offer quick solutions, definitively impacting the strengthening of the customer experience.

In today's business conditions, where consumers are becoming increasingly demanding and competition is intensifying, companies are creating subscription-based offer programs to overcome one-time sales and establish long-term relationships with consumers. Simultaneously, for consumers themselves, a continuous experience is more challenging than a one-time transaction. The subscription-based offer concept provides the company with the opportunity to create more stable and sustainable revenue streams. The advantage of this concept lies not only in improving revenue predictability but, above all, in the potential to strengthen, deepen, and establish long-term profitable relationships with consumers. Consumers who choose this offer program have an interest in using it regularly, opening significant opportunities to become fully loyal to the company, which will undoubtedly be conditioned by the consumer experience in terms of the quality of products and services.

By constantly updating the database, companies are able to identify and create offers they believe could be attractive to consumers, thus enhancing the consumer experience. A successful business digital transformation process ensures that companies can quickly respond and adapt to changes in the marketing environment. Modern tools and techniques for data analytics provide the capability for continuous monitoring of changes in the marketing environment, collecting data on the evolving needs, desires, and requirements of increasingly sophisticated consumers in real-time, as well as identifying purchasing trends. Based on this, information is obtained about both current and future changes in the marketing environment, serving as the foundation for decision-making in adjusting offers to environmental changes.

Digital transformation enables the optimization of business processes. Automation within business processes signifies a reduction in operational costs, as well as the minimization of risks resulting from human factors. Therefore, automation in business processes provides a higher level of precision and consistency in terms of the quality of service delivery. It also contributes to increased productivity and efficiency of existing resources. The reduction in operational costs offers the opportunity for a company to establish lower prices, making the offerings of that particular company more attractive to consumers compared to those of competitors. Enterprise digital transformation is an all-round and multidimensional reshaping and upgrading process, in which the application of digital technology not only involves the operation of traditional processes, business models and the construction of the innovation system, but also the use of intelligent tools to design, produce and even sell products, which further enhances the enterprise's product and technology innovation ability and environmental adaptability (Chen, 2023).

The process of digital transformation involves not only the modernization of internal processes within the company and the development of digital products and services but also pertains to the format of communication with consumers. It encompasses the creation and implementation of digital strategies for sales and communication channels, strategies for developing consumer relationships, as well as the creation of loyalty programs. Digital transformation should be considered as a complex phenomenon in the development of business structures (Lozynska, Kryshtal, Drinke, Lych, Kulikov, Panin, 2023). Digital platforms are beginning to be used as primary channels for customer interaction and transactions, as well as a means of creating innovative business models, including traditional industries (Lozynska, Kryshtal, Drinke, Lych, Kulikov, Panin, 2023). Digital transformation facilitates easier and faster market accessibility, thereby providing significant opportunities for market expansion through the use of digital platforms that are not constrained by geographical barriers. In this way, a company has the opportunity to sell its products and services worldwide, expanding its reach in the global market either independently or through partnerships or acquisitions of local enterprises. Communication through social media enables reaching a global audience at relatively low costs. The purpose of this communication is to inform, influence, and encourage consumers in their decision-making process. This creates opportunities for business growth due to a larger market potential. Companies should have a well-designed strategy for entering foreign markets, as strong competition, cultural differences, business regulations, and other factors necessitate careful planning.

Human resources play a pivotal strategic role in implementing digital transformation, as the success of this process depends not only on the use of digital technologies but also on the digital literacy of employees, as well as their ability and motivation to use them. Digital literacy pertains to the ability to use digital devices (smartphones, computers, tablets), possess technical skills enabling the use of mobile information and communication, and possess advanced technical skills primarily related to the use of modern information and communication technologies, the skill of accessing and collaborating on social networks. Therefore, companies should pay special attention to the selection (recruitment) of suitable employees for performing specific digital operations and provide continuous training for all employees to acquire and enhance digital skills in line with technological advancements, applying them effectively for the purpose of optimizing business processes. In addition, employees should have positive attitudes towards changes, the ability for continuous learning and teamwork, as well as a digital culture. Understanding and achieving digital maturity in HRM is crucial for organizations to effectively leverage digital technologies and drive HRM practices toward greater efficiency, effectiveness, and strategic impact (Nazarova, Rudenko, 2023).

The implementation of digital transformation necessitates the existence of organizational flexibility. Conversely, digital transformation itself, i.e., the adoption of digital technologies, contributes to strengthening flexibility. Companies that have successfully implemented digital transformation possess a more flexible technological infrastructure, enabling them to

respond more rapidly to changes in the environment and integrate new technologies into business processes. Organizational flexibility implies the presence of an organizational culture that supports adaptation to changes, i.e., the implementation of innovative activities. It is essential to have a leader's backing when fostering a culture of change and innovation (Sreenivasan, Suresh, 2023). Companies should cultivate an organizational culture where changes are perceived as opportunities rather than threats. Consequently, companies that influence, encourage, and motivate their employees to find innovative solutions and coordinate with each other in this regard will be more prepared and responsive to sudden and unexpected changes in the marketing environment. Organizational flexibility is also reflected in a company's ability to efficiently collect and analyze data on changes in the turbulent and dynamic marketing environment and, in accordance with that, formulate business strategies. Therefore, organizations need a stronger change management culture (Gupta, Modgil, Bhushan, Kamble, Mishra, 2023).

Digital transformation has brought various benefits to businesses, but simultaneously, it has created risks, primarily concerning cybersecurity. A specific challenge facing companies relates to data protection, encompassing both client personal information and their financial transactions, as well as confidential company data. Confronting this challenge involves adopting a cybersecurity strategy based on the implementation of technologies and processes, such as data encryption, continuous security monitoring, and employee training regarding security policies and procedures. On the other hand, the manner in which companies approach cybersecurity, specifically in minimizing the risks of cyber-attacks, recovering lost data, and notifying clients if data security is compromised, provides an opportunity to strengthen consumer trust in the company. Infusing security into the perspective of customer safety serves as an indicator of consumer loyalty in an increasingly turbulent digital environment.

Digital transformation requires initial investments in technological infrastructure, as well as employee training. These initial investments should not be viewed as costs but as an investment in reducing operational expenses, improving productivity and efficiency, creating opportunities for growth and development, and ensuring sustainable competitive advantages in the digital era of business.

## 5. Conclusions

In today's marketing environment, digital transformation is not an option but a business necessity. Digital transformation has established a new business paradigm based on the integration of digital technologies with business processes to enhance the user experience, which serves as a powerful means of differentiation from competitors. Enterprise digital transformation will subvert the traditional management mode and innovation mode of enterprises, provide a new impetus for enterprise innovation, and guide the enterprise innovation performance to achieve a leap forward (Chen, 2023). The challenge for businesses of any industry or size lies in determining how to create optimal customer experiences. Digital transformation encompasses several phases through which digital technology is introduced into business with the intention of fundamentally changing and modernizing the way business is conducted, redesigning business processes, and providing the customer experience at a level that exceeds their expectations.

Acquiring competitive advantage is largely contingent on an organization's ability to swiftly and efficiently integrate the latest technology into its business processes. A personalized approach enables the creation of a positive user experience, thereby increasing the likelihood of consumer loyalty. This is achieved through the use of cutting-edge technologies, which facilitate the collection, recording, and in-depth analysis of data, such as consumer behavior, preferences regarding products and services, past purchasing transactions, and consumer feedback. The ability of a company to create and deliver a customized user experience influences the establishment of its market image as well as the development of a sustainable competitive advantage. Digital transformation ensures the establishment of sustainable business processes as a prerequisite for growth and development. The process of digital transformation exhibits its individual specificities within each organization. Thus, digital transformation can be seen as a process of internal and external cultivation of enterprises, which is not only driven by digital technology, enterprise resources and capabilities, top management cognition, and institutional environment but also constrained by organizational inertia, organizational resistance, institutional constraints, and ethical misconduct (Wu, 2023).

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# Management and application of forensic audit in the protection of public revenues

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## Abstract

The functioning of each state is primarily related to the systematic achievement of set goals, which are determined by constitutional decisions, i.e. acts of the highest authorities. For the high-quality and efficient realization of the set goals, certain material resources are needed. The system of financing state functions, which is provided through the state or public budget, is a rather complex system that includes: the system of public revenues, the system of public expenditures and the fiscal system. Among the sources of public revenue, taxes have the greatest importance and role. Paying taxes is a civic duty, but above all a constitutional obligation. Taxpayers are not only citizens, natural persons, but also legal entities, i.e. business entities operating on the territory of the Republic of Serbia. The financial position and results of operations, that is, the economic power of legal entities and entrepreneurs, is expressed in financial reports, which are the basis for determining taxes. By manipulating the data in the financial report, it is not uncommon to mislead the state and all other users of financial reports. In order to protect public revenues, the state tries to sanction all those persons who illegally avoid paying taxes. Provision of information and material traces important for the prosecution of perpetrators of tax offenses is achieved by auditing financial reports and business books. Therefore, in the fight against tax evasion, an important role belongs to the auditing profession, primarily forensic auditing. It is a special discipline within forensic accounting that investigates criminal acts in financial reports, the application of which has expanded with the development of information technologies. The purpose of this paper is to better understand the methodology of forensic audit in the detection of tax evasion, at the same time to point out the challenges and perspective of introducing possible models of forensic audit into practice. The aim of the work is aimed at the authors' attempt to promote forensic auditing as a profession of the modern age and to point out the need for further improvement and development of this auditing profession.

*Keywords:* public revenues, management, taxes, financial statements, forensic audit.

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## 1. Uvod

Poreski sistem je uređen sistem prikupljanja i naplate poreza, od kojih se finansira javna potrošnja. Javna potrošnja podrazumeva finansiranje državnih organa uprave, sudstva, odbrane, javnih službi (zdravstvo, školstvo, kultura), transfera, subvencija privredi i sl. Pored države, odnosno njenih organa, subjekt javne potrošnje je pojedinac, na posredan ili neposredan način. Javna potrošnja se finansira iz javnih prihoda koji se formiraju preko instrumenata fiskalne politike kao što su: porezi, carine, takse, doprinosi i javni zajmovi. Porezima i doprinosima država određuje nivo javnih prihoda.

Upravo su poreska opterećenja ili kako ih mnogi zovu poreski nameti, zbog njihovog, na neki način, prisilnog karaktera naplate i glavni uzrok zbog kojih mnoga lica beže iz legalnih okvira poslovanja u neformalni okvir, odnosno sivu ekonomiju. Poreska evazija je ilegalna praksa izbegavanja plaćanja poreza, koja može da uključuje različite oblike manipulacije finansijskim izveštajima i drugim dokumentima kako bi se prikazala manja dobit, dohodak ili prihod nego što stvarno jeste.

U cilju sprečavanja daljeg porasta poreske evazije od izuzetnog je značaja mogućnost otkrivanja načina na koji je ista učinjena, kao i identifikacija počinilaca. Jednu od bitnih uloga u otkrivanju kriminalnih radnji ima i forenzička revizija kao i primena savremeni digitalnih forenzičkih alata. Kontinuirana edukacija na području interne, eksterne i forenzičke revizije u cilju otkrivanja finansijskih prevara je veoma značajna mera za povećanje efikasnosti revizije.

Forenzička revizija se odnosi na primenu forenzičkih metoda i tehnika u reviziji poslovnih knjiga i finansijskih izveštaja radi otkrivanja nepravilnosti, prevara, i drugih oblika zloupotrebe u finansijskim izveštajima, kao i prikupljanja dokaza o nepravilnostima i prevarama. Ovaj rad otvara pitanja novog područja delovanja revizije i novog praktičnog izazova za revizorsku struku – otkrivanje poreskih utaja.



## 2. Pojam, ciljevi i karakteristike forenzičke revizije

Revizija finansijskih izveštaja je postupak provere i ocene finansijskih izveštaja, kao i podataka i metoda koji se primenjuju pri sastavljanju finansijskih izveštaja na osnovu kojih se daje nezavisno stručno mišljenje o tome da li finansijski izveštaji u svim materijalno značajnim aspektima daju istinit i objektivan prikaz finansijskog stanja i rezultata poslovanja pravnog lica u skladu sa odgovarajućom regulativom za izradu finansijskih izveštaja (Zakon o reviziji, 73/2019). Forenzička revizija je nova praktična disciplina u okviru revizorske profesije. Reč je o novoj oblasti revizije finansijskih izveštaja, koja još nije značajnije uređena profesionalnom regulativom i standardima. Forenzička revizija ili „Fraud Examination“, predstavlja posebnu disciplinu u okviru forenzičkog računovodstva koja istražuje kriminalne radnje u finansijskim izveštajima (Petković, 2011).

Institut forenzičkih revizora (Institute of forensic auditors – IFA), forenzičku reviziju određuje kao „aktivnost prikupljanja, verifikovanja, obrade, analiziranja i izveštavanja o podacima s ciljem dobijanja činjenica i dokaza koji mogu biti iskorišćeni u sudsko-finansijskim sporovima nastalim usled kriminalnih radnji u finansijskim izveštajima i davanja preventivnih saveta“. Prema Paulu Thangamu, forenzička revizija predstavlja primenu računovodstvenih metoda u praćenju i prikupljanju forenzičkog dokaza, obično za istragu i krivični progon kriminalnih radnji poput pronevere i prevare” (Vuković, et al.,2021).

Forenzička revizija je ispitivanje finansijske evidencije kako bi se pronašli odgovarajući dokazi koji se mogu koristiti na sudu ili u drugom pravnom postupku. Forenzička revizija može da otkrije:

- Prevare vezane za utaju poreza,
- Finansijske prevare,
- Prevare povezane sa stečajem,
- Prevare sa procenom vrednosti,
- Prevare iz odnosa sa kupcima i dobavljačima,
- Prevare sa nabavkama.

Forenzička revizija se bavi razumevanjem i testiranjem sistema internih kontrola kako bi otkrila da li postoje rupe u sistemu koje bi omogućile da se prevara dogodi. Na taj način forenzička revizija deluje preventivno.

Ukoliko se prevara već dogodila forenzička revizija se fokusira na obezbeđivanje dokaza za pravne postupke, sprovodi istragu unutar firme, identifikuje prevaru i pomaže u izbegavanju velikih gubitaka u vezi sa prevarom, kako bi šteta bila minimalna. Forenzička revizija pomaže u dokazivanju ili opovrgavanju navoda i sumnji koje se iznose protiv firme (Petković, 2011). Drugim rečima, osnovni cilj forenzičke revizije jeste otkrivanje kriminalne radnje u finansijskim izveštajima, bez obzira na to kakva su mišljenja revizori donosili.

Karakteristike forenzičke revizije, ilustrovane u tabeli 1, ogledaju se u (Vuković, et al.,2021):

- Ispitivanju većine ili svih transakcija u preduzeću gde su se pojavili nagoveštaji prevare;
- Usmerenosti na otkrivanje kriminalnih radnji i manipulacija finansijskih izveštaja bez obzira na materijalnost;
- Proveravanju dužeg vremenskog perioda od poslovne godine;
- Izveštaji moraju biti prihvatljivi za sudski postupak.

**Tabela 1.** Karakteristike forenzičke revizije

R.b.	Karakteristike	Nezavisna revizija	Forenzička revizija
1	Cilj	Izražavanje mišljenja o istinitoj i „fer“ prezentaciji finansijskih izveštaja	Utvrđivanje i otkrivanje kriminalnih radnji u finansijskim izveštajima.
2	Tehnike	Metode uzrokovanja i izvođenje kontrolnih i suštinskih testova.	Suštinsko, detaljno i dubinsko proveravanje svih, ili tačno odabranih transakcija u sumnjivim područjima poslovanja
3	Period	Ispitivanje finansijskih izveštaja, transakcija i računa za određeni vremenski period.	Nema takvih ograničenja. Izveštaji, transakcije i računi mogu po potrebi biti ispitani od početka, „od korena“ bez obzira na datum događaja.
4	Izveštaj i mišljenje	Izražavanje mišljenja sa ili bez rezerve, uzdržavajućeg mišljenja ili negativnog mišljenja	Izražavanje mišljenja u pogledu mesta, vremena i načina izvršenja kriminalne radnje, obračunavanja štete i imenovanja počinioca.

Izvor: Petković, 2011.

Forenzičku reviziju sprovode stručna lica, koja poseduju *specifikum per se* znanje, iskustvo, kao, i veštine u borbi kriminalnih, protivzakonitih aktivnosti. U zavisnosti od svrhe kojoj je forenzička revizija namenjena i koju definiše naručilac, zavisi i izbor ciljeva. Npr. za preduzimanje kaznenih radnji potreban je dokaz o nepravilnostima.

Mogući ciljevi razvoja forenzičke revizije su:

- Detekcija oblasti potencijalnih nezakonitih radnji, nepravilnosti ili prevara;

- Detekcija konkretnih nezakonitih radnji, nepravilnosti ili prevara;
- Ocena visine rizika od utvrđenih nepravilnosti (namerno, nenamerno, visok ili nizak nivo nepravilnosti, velika ili mala opasnost od izvedene prevare, itd.);
- Izvođenje dokaza.

Huber (Huber, 2012) ističe da forenzička revizija poseduje brojne karakteristike potrebne za njeno priznavanje kao samostalne profesije, a ne kao podvrste unutar računovodstvene profesije. Zato on navodi da se forenzička revizija trenutno nalazi na putu da postane profesija.

### 3. Poreska evazija – pojam i oblici ispoljavanja

Pojava neizvršavanja poreskih obaveza stara je koliko i sami porezi. Evazija kao senka stalno prati poreze kroz njihov istorijski razvoj a samo se menjaju forme njenog pojavljivanja. Objašnjenje bi ležalo u samoj suštini poreza da je to uvek trošak, teret za poreske obveznike. Otuda i prirodna, egoistična potreba lica da zadrže celokupan stvoreni prihod ili dohodak. Istorija ljudskog društva pokazuje da je uvek postojao slabiji ili jači poreski otpori kao vidovima nepoštovanja poreskih vlasti ali i kao reakcija nezadovoljnih poreskih obveznika na nepravedne poreske zahteve države (Anđelković, & Jovašević, 2006).

U osnovi poreske evazije nalazi se otpor plaćanju poreza. Intenzitet otpora zavisi od mnogih elemenata (Dejan, 1997):

- visine poreskog opterećenja,
- namene trošenja sredstava prikupljenih porezom,
- poreskog oblika, i
- percepcije javnosti da li je poreski sistem pravičan ili nije.

Poreska evazija je rasprostranjena u svim zemljama, bez obzira na stepen ekonomskog razvoja i bez obzira na oblik društvenog uređenja. Ona je posledica krize ekonomskog sistema i predstavlja metod akumulacije kapitala.

Poreska evazija je složen fenomen koji se može posmatrati iz različitih perspektiva: kao problem javnih finansija ili pitanje poštovanja zakona ili kao odraz etičkih shvatanja (Andreoni et al, 1988). „Fenomen poreske evazije je u suštini pravni problem sa ekonomskim aspektima.“ Nije svaki oblik poreske evazije nezakonito ponašanje poreskih obveznika. Međutim, bežanje od obaveza plaćanja fiskalnih obaveza najčešće podrazumeva i nezakonito ponašanje njihovih nosilaca. S tim u vezi, poreska evazija može biti dvojaka, i to (Lovčević, 1998):

- Zakonita (tax evasion) - postupci poreskog dužnika kojima se izbegava plaćanje poreza, ali koji ne predstavljaju povredu zakona u smislu da je poreski dužnik preduzeo neku radnju suprotno važećim propisima. Može biti nameravana i nenameravana. Kod nameravane zakonite poreske evazije motiv ponašanja poreskog obveznika je želja da očuva ekonomsku snagu. Nameravana - kada poreski obveznik preduzima neke radnje ili propuštanja upravo sa svrhom da izbegne plaćanje poreza. Nasuprot tome – kod nenameravane poreski obveznik, preduzimajući radnje ili propuštanja, izbegava plaćanje poreza, ali pri tome ovaj učinak nije bio motiv njegovog ponašanja.
- Nezakonita (tax avoidance) - postupci poreskog dužnika usmereni na izbegavanje plaćanja poreza kojim se krši zakon. Ovi postupci se svode ili na sam čin neplaćanja poreza, ili na propuštanje da se postupi u skladu sa zahtevima iz poreskog upravnog odnosa, koji su poreskom dužniku nametnuti da bi se obezbedilo da poreska obaveza bude ispunjena (da podnese poresku prijavu, da uredno vodi poslovne knjige, da dopusti poresku kontrolu i dr.) (Jelčić, 1983).

Nezakonita evazija može javiti u dva vida. Prvi oblik nedopuštene poreske evazije je poreska utaja, poreska defraudacija ili utaja poreza i doprinosa, odnosno izbegavanje plaćanja poreza. Drugi oblik nezakonite poreske evazije je krijumčarenje ili kontrabanda razne robe, proizvoda ili usluga preko granica jedne ili više država.

Najopasniji i najteži oblici kršenja poreskih zakona kojima se i nanose najteže posledice, odnosno najveće štete društvenoj zajednici predstavljaju poreska krivična dela. Poreska krivična dela inkriminisana Krivičnim zakonikom (Krivični zakonik, 35/19), u glavi dvadeset drugoj, u grupi krivičnih dela protiv privrede: Poreska utaja (čl. 225) i Neuplaćivanje poreza po odbitku (čl. 226), predstavljaju najteže oblike protivpravnih ponašanja poreskih obveznika. To su osnovna poreska, fiskalna krivična dela u našem pravnom sistemu.

Pored njih, postoje i sporedna ili dopunska poreska krivična dela koja su propisana u Zakonu o poreskom postupku i poreskoj administraciji (lex specialis) kao blanketnim propisom. Kao poreska krivična dela propisana Zakonom o poreskom postupku i poreskoj administraciji (ZoPPIPA, 138/2022): Neosnovano iskazivanje iznosa za povraćaj poreza i poreski kredit (čl. 173a), Ugrožavanje naplate poreza i poreske kontrole (čl. 175), Nedoizvoljen promet akciznih proizvoda (čl. 176), Nedoizvoljeno skladištenje robe (čl. 176a), Poreska prevara u vezi sa porezom na dodatnu vrednost (čl. 173a), Ugrožavanje naplate poreza i poreske kontrole (čl. 175), Nedoizvoljen promet akciznih proizvoda (čl. 176), Nedoizvoljeno skladištenje robe (čl. 176a). Ova grupa krivičnih dela predstavlja ozbiljan društveni problem koji bitno urušava ekonomsku osnovu društva i remeti ekonomski sistem.

Najčešći načini na koje poreski obveznici, pravna lica, nezakonito izbegavaju plaćanje poreza su:

- Neizdavanje računa za izvršen promet dobara i usluga;
- Lažiranje mesta prometa kao da se vrši u inostranstvu;
- Fiktivan izvoz kao oblik PDV prevare;

- Uzimanje iz poslovne imovine za privatne svrhe.
- Fiktivne nabavke na osnovu falsifikovane dokumentacije;
- Fiktivne nabavke na osnovu validne dokumentacije;
- Korišćenje prethodnog PDV za promet koji nije oporeziv PDV-om.
- Neevidentiranje prodaje u poslovnim knjigama,
- Neotpisivanje obaveze koja je zastarela ili otpuštena.

#### 4. Metodologija forenzičke revizije i mogući modeli u detekciji poreske evazije

##### 4.1 Forenzički revizori

Revizori kriminalnih radnji su iskusni stručnjaci za dokumentovano praćenje kriminalnih radnji u poslovnim knjigama pravnog subjekta. Forenzički revizor je stručnjak koji poseduje visok nivo profesionalnih znanja, veštine, vrednosti i etike i svoje znanje koristi kako bi istražio sve vrste manipulacija u računovodstvu, uključujući prevaru, utaju poreza, proneveru, lažni bankrot, korupciju i pranje novca i dr.

Revizori, čiji je profesionalni zadatak istraživanje kriminalnih radnji, trebalo bi da poseduju opšta i specifična profesionalna znanja iz te oblasti. Ona podrazumevaju: poznavanje načina na koji se izvršava kriminalna radnja, prepoznavanje signala upozorenja i drugih naznaka koje mogu biti putokaz za otkrivanje kriminalnih radnji, poznavanje trougla kriminalnih radnji (Wiley, 2010). Pored toga, istraživanje kriminalnih radnji zahteva od revizora: upoznavanje s novim teorijskim i praktičnim saznanjima u vezi s kriminalnim ponašanjem, poznavanje redosleda tj. faza (koraka) u istrazi kriminalnih radnji, dobro poznavanje pravnih aspekata kriminalnih radnji, poznavanje načina pribavljanja valjanih dokaza, poznavanje profesionalnih organizacija koje se bave aktivnostima iz ove oblasti, poznavanje načina sticanja sertifikata iz oblasti istraživanja kriminalnih radnji, saznanja o karakteristikama koje se tiču socijalnog aspekta i načina ponašanja počinitelaca kriminala (Lekić, et al., 2018).

Dakle, forenzički revizor je profesionalac koji koristi jedinstveni spoj obrazovanja, iskustva i veština u primeni znanja računovodstva, revizije i istrage kako bi otkrio istinu, sproveo finansijsku istragu i pružio podršku u krivičnom ili parničnom postupku.

Kada revizor, unutar, standardnog, revizorskog aranžmana, bilo u svojstvu internog, bilo eksternog revizora, posumnja, ili, detektuje sumnjivu ili kriminalnu aktivnost, u datim okolnostima, još uvek, nije reč o forenzičkoj reviziji. Međutim, ukoliko se, na osnovu sumnje, angažuje revizor, koji u okviru tog, posebnog, angažmana, ili, potvrdi, ili, opovrgne, inicijalnu, premisu, tada, de facto, jeste reč o forenzičkoj reviziji. Zarad otkrivanja i sprečavanja kriminalnih aktivnosti, u finansijsko - računovodstvenim izveštajima, od inherentnog je značaja, upravo, prepoznavanje formi i načina realizacije istih. Međunarodni revizorski standardi, kao inherentne reprezentacije kriminalnih aktivnosti, u finansijsko - računovodstvenim izveštajima, navode: fingirano finansijsko – računovodstveno izveštavanje, kao i protivzakonito prisvajanje imovinskih delova kompanije (Parnicki & Marić, 2020).

##### 4.2 Metodologija forenzičke revizije

Metodologiju forenzičke revizije čine postupci i radnje odnosno procedure koje forenzički revizori koriste za otkrivanje kriminalnih radnji i prikupljanje dokaza.

Izvršenje poreskih krivičnih dela može se utvrditi iz brojnih faktora koji proizlaze iz same suštine ove grupe krivičnih dela. U nastavku je prikaz najvažnijih pokazatelja mogućih preduslova što vode ka poreskim krivičnim delima (Vranko, 2012):

1. izbegavanje prijavljivanja poreza nadležnim organima,
2. prijava lažne adrese što nije u vezi s poslovanjem ili prebivalištem poreskog obaveznika,
3. obveznik stalno odgađa zakazivanje i održavanje sastanka na zahtev nadležnog poreskog organa,
4. obveznik ne vodi poslovne knjige i dokumentaciju o poslovanju, posebno kad je već dobio savet da to treba činiti,
5. nema poslovnu dokumentaciju, ili je nepravilno evidentirana, ili postoje dva načina vođenja dokumentacije, odnosno postoji namera da je se falsifikuje,
6. poslovne knjige i dokumentacija se uništava bez razumna objašnjenja ili se deo odbija da se stavi poreskom organu na raspolaganje,
7. nekooperativno ponašanje obveznika što se ogleda kao uskraćivanje zahtevanih podataka i odbijanje davanja obrazloženja u vezi s odstupanjima u evidencijama ili upitnima knjigovodstvenim stavkama,
8. davanje neverodostojne, pogrešne i nedosledne izjave,
9. podnošenje neverodostojne dokumentacije ili pisane izjave, kako bi se dokazala neka knjigovodstvena stavka ili podatak unesen u poresku prijavu,
10. izdavanje lažnih računa,
11. lažno prikazivanje izvoznih stavki manje vrednim,
12. uplate dela prihoda od prodaje na račune stranih banaka, bez stvarne poslovne svrhe,
13. namera prikrivanja stvarnog dokumenta ili činjeničnog poslovnog stanja,

14. unošenje naknadnih promena u već proverene izveštaje ili dokumente,
15. izbegavanje uplaćivanja ili obračuna ukupnih bruto-prihoda,
16. učestalo gotovinsko plaćanje, umjesto preko računa u banci ili kreditnom karticom, naročito pri velikim nabavkama ili troškovima,
17. kada samo jedna osoba nadzire prodaju, novčane prilive i poslovnu dokumentaciju, što onemogućuje prenos odgovornosti na druge zaposlene,
18. umešanost u nezakonite poslovne aktivnosti ili saradnja s takvim kompanijama,
19. trenutni pristanak na usklađivanje poreza i neuobičajena zabrinutost u vezi sa trenutnim završetkom istrage,
20. životni stil i sredstva kojima raspolaže osumnjičeni koji nije dosledan u prijavljivanju prihoda iz poslovne delatnosti,
21. pokazatelj da vredna stavka u imovini preduzeća što je se vodi na obveznika pripada trećim osobama ili je stečena na ime trećih osoba,
22. izjave osumnjičenog same sebi svrhom, bez pripadajuće dokumentacije koja bi ih potvrdila,
23. prikazivanje poreskih olakšica za fiktivne ili preminule članove porodice, mada je sasvim jasno da nema osnova za olakšicu,
24. navođenje izmišljenih ili nepostojećih zaposlenih na isplatnoj listi,
25. neuplaćivanje obaveza u penzijski fond za zaposlene,
26. evidentiranje izmišljenih načina isplate zaposlenima izvan zemlje kako bi kompanija ili pojedinac izbegli plaćanje poreza,
27. zahtev dobavljačima da velike nabavke plaćaju u stranoj valuti,
28. izbegavanje podnošenja poreske prijave kada je jasno da je obvezniku dospeo porez, a on je znao ili morao znati da mora podneti poresku prijavu,
29. upadljivo prikazivanje odbitaka, kredita i/ili olakšica,
30. prijavljivanje prevelikih osobnih kao poslovnih troškova,
31. izostavljanje specifičnih stavki uz već navedene slične stavke,
32. izostavljanje evidencija o izvorima prihoda u celosti,
33. uplate novčanih sredstava iz nejasnih izvora.

Revizor je dužan da prikupi validne dokaze kojim bi potkrepio svoj nalaz, izveštaj, a u cilju ostvarenja postavljenih ciljeva forenzičke revizije. Revizijski dokazi prikupljeni u postupku forenzičke revizije moraju biti objektivni, relevantni, ubedljivi i da nedvosmisleno ukazuju na izvršeno krivično delo, jer se na osnovu takvih dokaza donose se sudske presude.

Za ostvarenje postavljenog cilja revizije revizoru na raspolaganju stoji šest vrsta dokaza revizije: fizički dokazi; iskazi trećih lica; matematički dokazi; dokumentacija; prikazi klijentovog osoblja; međusobni odnosi podataka (Stanišić, 2022).

Procedure forenzičke revizije koje se koriste za prikupljanje dokaza nazivaju se testovi revizije. Testovi revizije su osnovni alat koji forenzički revizori koriste kako bi ostvarili specifične ciljeve forenzičke revizije. U finansijskom izveštaju, privredni subjekt iznosi određene tvrdnje o finansijskom položaju i uspešnosti poslovanja. Zadatak forenzičkog revizora je da testira bilansne pozicije prikazane u subjektovom finansijskom izveštaju, a radi otkrivanja eventualno namerno izazvanih nepravilnosti u priznavanju, vrednovanju i prikazivanju istih.

U svom radu forenzički revizori koriste testove koji se mogu podeliti u četiri glavne kategorije (Stanišić, 2022): analitički testovi; posmatranje i istraživanje; testovi transakcija; testovi salda računa.

Analitički testovi finansijskih informacija sprovode se na osnovu proučavanja i poređenja odnosa među podacima. Oni pomažu forenzičkim revizorima na taj način da usmeravaju pažnju na neočekivane promene ili neuobičajene odnose u finansijskim podacima i predstavljaju osnovu za planiranje drugih testova.

Posmatranje i istraživanje koriste se za testiranje kontrola za koje ne postoje odgovarajući dokumentarni dokazi. Revizori ispituju razna lica i sprovode testove posmatranja da bi utvrdili ko vrši određenu aktivnost ili kako ili kada se ta aktivnost izvršava.

Testovi transakcija odnose se na ispitivanje dokumenata i računovodstvene evidencije uključene u obradu određenog tipa transakcije. Testovi transakcija omogućavaju forenzičkom revizoru da otkrije nepravilnosti analizirajući pojedinačne poslovne događaje.

Testovi salda, koji direktno ispituju završna salda računa, primenjuju se na salda subjektivih računa koji čine bilansne pozicije u finansijskom izveštaju. Cilj testiranja salda računa je otkrivanje nepravilnosti ispitivanjem završnog salda a ne pojedinačnih transakcija koje sačinjavaju taj saldo.

Metode revizije koje revizori koriste da bi prikupili dokaze, mogu se klasifikovati na sledeće:

- fizičko ispitivanje,
- dokumentovanost,
- praćenje evidencije dokumenata,
- inspekcija,
- konfirmacije,
- ponavljanje aktivnosti,
- posmatranje,

- usaglašavanje,
- istraga,
- analitičke procedure.

### 3.3. *Mogući modeli implementacije forenzičke revizije*

U stručnoj literaturi i praksi postoje više predloga kako primeniti forenzičku reviziju, naročito posle iskazanih slabosti tradicionalne, eksterne revizije u oblasti sprečavanja i otkrivanja prevarnih radnji posle velikih svetskih finansijskih skandala. Međutim, značajan je pokušaj predlaganja načina primene forenzičke revizije od strane najvećih revizorskih kompanija na svetu (Pricewaterhouse Coopers International Limited, Grant Thornton International, Deloitte, KPMG International, BDO International, Ernst & Young), koji ističu da je značaj njihovih predloga u poboljšanju ideja u otkrivanju prevara i da za svaki predlog postoje argument za i protiv, te da nijedan model ne treba nužno prihvatiti bez ozbiljne rasprave (Vukadinovic, et al, 2017).

Prvi model primene forenzičke revizije koji predlažu (DiPiazza, et al. 2006) jeste model obavezne primene forenzičke revizije, koji bi trebalo sprovoditi u periodu svakih tri ili pet godina. Za razliku od konvencionalne, tradicionalne revizije, forenzička revizija je slična policijskoj istrazi. Predmet istrage od strane forenzičkog revizora su svi relevantni podaci i informacije o privrednom subjektu.

Drugi predloženi model jeste model na bazi slučajnog izbora, koji bi svakako bio manje agresivan u odnosu na prvi model obavezne forenzičke revizije i jeftiniji sa stanovišta troškova, ali bi efikasnost otkrivanja prevara bila manja. Naime, bilo bi otkriveno manje prevara, ali bi efekat mogao biti isti u smislu preventive i odvratanja od činjenja prevara, iz razloga što potencijalni počinioci prevara ne bi mogli biti sigurni da neće biti predmet istrage u bilo kom trenutku.

Treći model je model zasnovan na mogućnosti izbora drugih opcija. Jedna od opcija je da akcionari mogu sami da iniciraju angažovanje forenzičkog revizora u svojim kompanijama pri čemu akcionari sami donose odluku o obimu angažovanja forenzičkog revizora. Ovakav izbor predstavlja snažan mehanizam za detekciju i otkrivanje prevara, ali ima i preventivni karakter, jer menadžment i zaposleni eventualno skloni prevarama ne znaju da li će i u kom trenutku donosioci odluka glasati za sprovođenje forenzičke revizije.

Pored ova tri modela, određeni autori predlažu još dva modela (Tušek, et al., 2013). Prvi model je sprovođenje forenzičke revizije, tokom redovne eksterne revizije u svim fazama. Autori ističu da ovaj model ne predstavlja forenzičku reviziju ili reviziju prevare već reviziju finansijskih izveštaja uz pojačani profesionalni skepticizam da postoji prevara. Pojedini autori navode da forenzička revizija ne mora da bude deo tradicionalnog modela revizije (Stevenson, et al., 2009). Drugi model je sprovođenje forenzičke revizije na osnovu anonimne prijave. Autori (Tušek, et al., 2013) navode Zakon Sarbanes-Oxley iz 2002. u SAD. Prema ovom zakonu, revizorski odbor mora uspostaviti procedure za prijem anonimnih prijava i rešavanje ovih prijava. Autori konstatuju da ovaj zakon predviđa mogućnost korišćenje usluga forenzičkog revizora. Istraživanja u oblasti praktičnih mogućnosti primene forenzičke revizije ukazuju na opredeljenost ka različitim modelima (Vukadinovic, et al., 2017).

## 4. Zaključci

Poreska evazija kao fenomen ostvaruje na nacionalnom i na međunarodnom planu ima ozbiljne posledice za fiskalnu politiku svake države. One su višestruke prirode od kojih je najteža, finansijsko-politički posmatrano, umanjani fiskalni randman prikupljenih prihoda.

Forenzička revizija uključuje detaljno istraživanje finansijskih transakcija i drugih dokumenata kako bi se pronašle eventualne nepravilnosti. To se može učiniti na nekoliko načina, uključujući analizu računa, transakcija, poslovnih procesa, dokumenata, elektroničkih zapisa i drugih informacija. Revizor koji sprovodi forenzičku reviziju koristi se različitim tehnikama i metodama kako bi otkrio eventualne nepravilnosti.

Forenzička revizija može pomoći u očuvanju integriteta finansijskih izveštaja, što je ključno za održavanje transparentnosti i poverenja u poslovanju. Osim toga, to može pomoći u zaštiti interesa države, osiguravajući da se poreske obveze ispunjavaju na pravilan način.

U stručnoj literaturi i praksi, kao mogući modeli primene forenzičke revizije, predloženi su model gde bi se forenzička revizija odvijala uz redovnu eksternu reviziju, zatim model iznenadne revizije po modelu slučajnog izbora i na osnovu dojava. Ovome treba dodati i model primene forenzičke revizije na osnovu zahteva i volje zaposlenih/akcionara privrednih subjekata. Efekat primene ovih modela bi mogao da ima ne samo u broju otkrivenih prevara već i u preventivnom delovanju. Jer samo postojanje neizvesnosti ili očekivanje da će neko biti predmet forenzičke revizije uz mogućnost otkrivanja prevara, takođe je jak preventivni faktor odnosno faktor odvratanja. Naravno forenzička revizija nije jedini instrument borbe protiv finansijskog kriminala ali svakako jeste veoma bitan.

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