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THE IMPORTANCE OF MERCHANDISE ACCOUNTING
STUDY ON THE WAYS OF MERCHANDISE ACCOUNTING

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Abstract:
Inventory management is crucial for the efficient conduct of commercial activities, and accurate accounting of goods is essential for evaluating financial performance. This article emphasizes the importance of merchandise accounting in business operations. It also highlights the importance of maintaining accurate and precise records for making informed decisions regarding purchases and inventory management. Various methods of inventory valuation are discussed, such as purchase or production cost, replacement cost, or fair value. The article highlights the use of account 371 "Merchandise" to record purchases and sales of goods and account 378 "Price Differences on Merchandise" to reflect the commercial markup associated with unsold goods. Additionally, the article explains the method of perpetual or periodic inventory valuation and determines whether goods are accounted for at cost or at retail prices. Overall, this article underscores the importance of precise merchandise accounting in inventory management and financial performance evaluation.

Keywords: Merchandise Accounting, Inventory Management, Perpetual Inventory, Periodic Inventory, Retail Price

1. INTRODUCTION

Merchandise accounting is a vital aspect of business operations, providing a system of recording and monitoring the inventory of goods that are essential for any enterprise involved in the sale or resale of products. Accurate and precise inventory management is crucial for making informed decisions in stock management, planning purchases, and determining precise financial results. The purpose of this article is to examine the key aspects of merchandise accounting, focusing on how inventory management can contribute to improving financial performance and evaluating merchandise (Order of the Minister 1802, 2014).

Merchandises or goods are recognized in accordance with OMFP 1802/2014, which follows the principles and criteria established in international financial reporting standards (IFRS). Goods are recognized in accounting when they meet the recognition criteria, such as control over the goods, future economic benefits associated with them, and the ability to evaluate them reliably. Recognition is usually made at the time of delivery or transfer of ownership to the holder. Additionally, the evaluation of goods is carried out using one of the permitted methods according to OMFP 1802/2014, such as cost of purchase or production, replacement cost, or net realizable value. The evaluation method used must be consistently applied from one period to another.

Also, land and buildings intended for sale fall under the category of goods in accounting according to OMFP 1802/2014. They are evaluated and recognized as goods when they meet the recognition criteria, such as control over them and future economic benefits associated with their sale (Order of the Minister 1802, 2014). Recognition is generally made at the time of transfer of ownership to the buyer. Additionally, the evaluation can be done at the cost of purchase, production cost, or fair value. The evaluation method used must be consistently applied. The presentation in the financial statements is at the carrying amount, which can be the historical cost minus accumulated depreciation or fair value, depending on the evaluation method applied. Additionally, it may be necessary to provide additional information in the explanatory notes of the financial statements regarding land and buildings intended for sale, such as initial cost, residual value, evaluation method used, and other relevant information.

2. ACCOUNT 371 "MERCHANDISE"

In order to carry out commercial activities, every economic unit must have merchandise inventory. Merchandise is the term used to describe items that are involved in the exploitation cycle of the entity, acquired either from outside the unit or produced within it and placed in circulation to be sold in their current state or after processing to obtain added value (profit).

Throughout their cycle, from producer to consumer, merchandise generates a very large number of economic and financial operations, which are carried out by many economic agents from different commercial activity sectors (Contzilla, 2019). In this regard, we differentiate three categories of commercial entities in the merchandise circuit:

- en-gros or wholesale;
- en-detail or retail;
- mixed.

Merchandise is sold in appropriate commercial networks that may belong to:

- Economic agents specializing in the supply and marketing of merchandise;
- Economic agents whose purpose is not the sale of merchandise, but who have warehouses or merchandise stores.

Debit 371 "Merchandise"	Credit
- the recorded purchase price value of goods purchased (401, 408, 446, 542) - the recorded price value of goods representing the contribution in kind of shareholders or associates (456) - the value of goods acquired from third parties (357, 401) - the recorded price value of raw materials, consumable materials, inventory objects, animals and birds, sold as is (301, 302, 303, 361) - the recorded price value of goods received from affiliated companies, other companies with participations, units or subunits (451, 452, 481, 482) - the commercial margin value and the non-deductible value added tax, if the inventory is kept at retail price (378, 4428) (Order of the Minister 1802, 2014)	- the recorded price value of goods removed from inventory through sales and inventory losses (607) - the recorded price value of goods sent to third parties (357) - the commercial margin value and non-deductible value added tax related to goods removed from inventory (378, 4428) - the recorded price value of goods delivered to affiliated companies, units, and subunits (451, 452, 481, 482) - the value of donations and losses from calamities (658, 671)
The balance of the account represents the value at registration price of the merchandise in stock at the end of the period.	

3. ACCOUNT 378 "PRICE DIFFERENCES ON MERCHANDISE"

Account 378 keeps track of the commercial markup related to the merchandise held in the company's inventory. From an economic perspective, it is a rectifying account for the recorded value of merchandise, while from an accounting function perspective, it is a passive account. (Merchandise Accounting, 2011)

<table>
<tr><td>Debit</td><td>378 "Price Differences on Merchandise" Credit</td></tr>
<tr><td>- The account is debited only once at the end of the accounting period when the merchandise that has been sold is removed from the records, in accordance with the debit of account 371 "Merchandise". (Iacob, 2014)
The accounting formula is:
378 = 371.</td><td>- This account is credited during the accounting period, with the commercial markup related to the goods received, in accordance with the debit of account 371 "Merchandise".
The accounting formula:
371 = 378</td></tr>
<tr><td colspan="2">The balance of the account is a credit balance and reflects the value of the commercial margin related to the goods in stock (still unsold) at the end of the accounting period.</td></tr>
</table>

4. STUDY ON MERCHANDISE ACCOUNTING IN SPECIFIC CASES

1). Perpetual inventory method, merchandise recorded at cost of acquisition.

Company SC "X" SRL purchases merchandise from a supplier at a purchase price of 50,000 lei as reflected in the invoice, procurement transport expenses of 1,000 lei, and VAT of 19%. The merchandise is then sold to customers at a negotiated selling price of 80,000 lei, with VAT of 19%, and subsequently discharged from inventory at the value of the merchandise sold.

a) Purchase of merchandise:

% = 401 "Suppliers"	**<u>60.690</u>**
371 " Merchandise"	51.000
4426 "Deductible VAT"	9.690

b) Sale of merchandise:

4111 "Customers" =	%	**<u>95.200</u>**
	707 "revenue from the sale of goods"	80.000
	4427 "Collected VAT"	15.200

c) Discharge of sold merchandise from inventory:

607 = 371 "Goods" "Expenses related to goods"	**<u>50.000</u>**

2). Perpetual inventory method, inventory recorded at acquisition cost.

SC "Y" SRL purchases goods from a supplier for a purchase price stated on the invoice of 20,000 lei, procurement transport expenses of 600 lei, and VAT of 19%. When selling goods to customers, the company adds a markup of 20%. The goods are sold only wholesale. The entire inventory is sold to customers and subsequently removed from the inventory.

a) Purchase of merchandise:

% = 401 "Suppliers"	**<u>23.800</u>**
371 " Merchandise"	20.000
4426 "Deductible VAT"	3.800

b) Recording the commercial markup:

371 "Inventory" = 378 "Price differences on goods"	**4.000**

c) Sales of merchandise:

4111 "Customers" = %	**28.560**
707 "revenue from the sale of goods"	24.000
4427 "Collected VAT"	4.560

d) Discharge of sold merchandise from inventory:

% = 371 "Inventory"	**24.000**
607 "Expenses related to merchandises sold"	20.000
378 "Price differences on merchandises"	4.000

3). Perpetual inventory method, keeping track of merchandise at the retail selling price.

Company SC "Y" SRL purchases goods from a supplier for an acquisition cost of 20,000 lei, including a 19% VAT. When selling the goods, the company applies a markup of 20%. The goods are sold through retail stores. The entire stock is sold to customers and subsequently removed from inventory. The inventory is maintained at the retail selling price.

a) Purchase of merchandise:

% = 401 "Suppliers"	**23.800**
371 " Merchandise"	20.000
4426 "Deductible VAT"	3.800

b) Recording of commercial markup and non-deductible VAT:

371 "Goods" = %	**4.560**
378 "Price difference on merchandise"	4.000
4428 "Non-deductible VAT"	4.560

c) Sales of merchandise:

5311 "Cash in lei" = %	**28.560**
707 "Revenue from sales of merchandise"	24.000
4427 "Collected VAT"	4.560

d) Discharge of sold merchandise from inventory:

% = 371 "Goods"	**28.560**
607 "Merchandise expenses"	20.000
378 "Price difference on goods"	4.000
4428 "Non-deductible VAT"	4.560

4). The intermittent inventory method, evaluation at acquisition cost:

SC "Z" SRL company purchases goods from a supplier at a cost of 100,000 lei, with 19% VAT. Half of the procured goods are sold to customers at a negotiated selling price of 75,000 lei, with 19% VAT, and subsequently, the inventory is unloaded with the value of the goods sold.

a) Purchase of merchandise:

% = 401 "Suppliers" 607 "Cost of merchandises sold" 4426 "Deductible VAT"	**119.000** 100.000 19.000

b) Sales of merchandise:

4111 "Customers" = % 707 "Sales revenue" 4427 "Collected VAT"	**89.250** 75.000 14.250

c) Recording the value of the inventory of goods at the end of the period as determined by inventory of 50,000 lei:

371 "Inventory of goods" = 607 "Cost of merchandises sold"	**-50.000**

OR

607 "Cost of merchandises sold" = 371 "Inventory of merchandises "	**50.000**

d) Reinstatement of the cost of the inventory of goods at the beginning of the next accounting period:

607 "Cost of merchandises sold" = 371 "Inventory of merchandises "	**50.000**

5. CONCLUSION

In conclusion, inventory accounting is essential for efficient inventory management and accurate financial reporting in commercial activities. Accurate and precise inventory records allow for informed decisions regarding purchases and stock planning. However, there are different methods for inventory valuation, such as cost of acquisition or production, etc. Account 371 "Merchandise" is used to record the value of purchases and sales of merchandise, and account 378 "Price Differences in Merchandise" reflects the commercial markup that the company adds to unsold merchandise(Balteș, 2015). Depending on the inventory method used (perpetual or intermittent), inventory records can be maintained at the cost of acquisition or retail price.

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INTERNET BANKING: PERCEPTION OF RISK AND APPLICABILITY OF BIOMETRIC TECHNOLOGY FOR AUTHENTICATION

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Abstract:
Internet banking (IB) has become an essential component of modern banking services, providing customers with the convenience of conducting financial transactions from anywhere at any time. The convenience of online banking comes with inherent risks, such as cyber threats, identity theft, and financial fraud. Banks use various security measures to address these risks, including strong passwords, two-factor authentication, and biometric authentication. Biometric authentication is an effective technique for enhancing the security and convenience of internet banking. They provide customers with education and awareness programs to help them recognize and avoid phishing scams and other cyber threats. The main objective of this paper is to emphasize the growing importance of Internet banking and the need for continued research and analysis to understand its impact on the banking industry and its customers, but also how the "security" terms have changed.

Keywords: Internet Banking, Security, Risks, Authentication, Threats

1. THE TRANSITION FROM TRADITIONAL BANKS TO NEW BANKING SERVICES

The origins of internet banking can be traced back to the 1980s when early experiments were conducted to offer banking services through videotext systems. However, it wasn't until the late 1990s and early 2000s that Internet banking began to gain widespread popularity. Stanford Federal Credit Union introduced one of the first online banking services in the United States in 1994, offering online access to account balances and transfers. The first online-only bank, Security First Network Bank, was launched in 1995 and was later acquired by Royal Bank of Canada. The growth of the internet and advancements in technology continued to fuel the growth of Internet banking in the early 2000s. Many traditional brick-and-mortar banks began to offer Internet banking services to compete with online-only banks and to meet the changing demands of customers who wanted more convenient access to their accounts. In the mid-2000s, mobile banking began to emerge as a new way for customers to access their accounts through smartphones and other mobile devices. Today, internet and mobile banking are widely used and offer a wide range of features and functionalities, from simple balance inquiries and transfers to more advanced services such as bill payment, mobile check deposit, and investment management. Despite its widespread use, Internet banking has also faced security challenges, with various types of fraud and hacking attempts being reported. As a result, banks have continued to invest in advanced security measures such as multi-factor authentication, encryption, and risk-based authentication to protect their customers' personal and financial information.

Artificial intelligence (AI) has the potential to revolutionize the financial services industry by improving the efficiency, accuracy, and speed of financial processes. In terms of bank issues, it is important to remember that identity verification is a critical aspect of banking security. When conducting transactions or communicating with your bank, it is important to follow their established protocols for identity verification to ensure that you are communicating with authorized individuals and that your personal information remains secure. Initially, authentication was based on physical tokens such as signature cards, ID cards, and PINs. However, with the growth of digital banking and online transactions, the need for more secure authentication methods emerged. Here are some of the key stages in the evolution of bank system authentication:

- Single-factor authentication: This was the traditional method of authentication where users were required to provide a single piece of information, such as a password or PIN.
- With the rise of online banking and e-commerce, Two-factor authentication (2FA) was introduced to enhance security. This method requires users to provide two pieces of information, typically a password or PIN combined with a one-time code sent to a mobile device.

- Biometric authentication involves using unique physical characteristics, such as fingerprints, facial recognition, or voice recognition, to authenticate users. Biometric authentication has become more prevalent in recent years due to its convenience and security benefits.
- Multi-factor authentication (MFA) is an authentication method that requires users to provide at least two forms of identification to access their accounts. This could include a combination of passwords, biometric authentication, smart cards, or other forms of identification.
- Risk-based authentication uses machine learning algorithms to analyze user behavior and determine the level of risk associated with a particular transaction. Based on the level of risk, the authentication method may change, such as requiring additional authentication factors or denying access to the account.

2. RISKS AND ASSUMPTION

While Internet banking offers many benefits, there are also some risks associated with it. Security risk entails the ability to safeguard information from potential threats [1]. The overarching notion of security risk pertains to the potential for the misuse and manipulation of personal data. In the realm of Internet Banking (IB), this risk pertains to worries surrounding both internet and IB system security [2]. This risk encompasses online theft, breaching bank websites, and unauthorized intrusion [3]. Various investigations, including the works of Lee [4], Damghanian et al. [5], and Nguyen and Nguyen [6], have highlighted the adverse impact of this risk on the acceptance of IB.

Privacy risk is chiefly centered on customers' apprehension regarding the potential loss of control over their confidential information [7]. Within the scope of IB, users may have their identity compromised due to hackers' interference or banks sharing customer records with third parties for alternative motives [8]. This risk has been identified as a dimension of perceived risk in the adoption of IB by studies such as those conducted by Aldas-Manazano et al. [9], Lee [4], Nguyen and Nguyen [6], and Takieddine and Sun [10].

Social risk signifies the potential for receiving unfavorable reactions or comments from customers' social circles [9]. In the context of IB, this risk deals with concerns customers might have, such as negative opinions from family, friends, or colleagues about IB usage. This extends to fears of diminished social status if fraudulent activities or errors occur, as well as the lack of direct communication avenues.

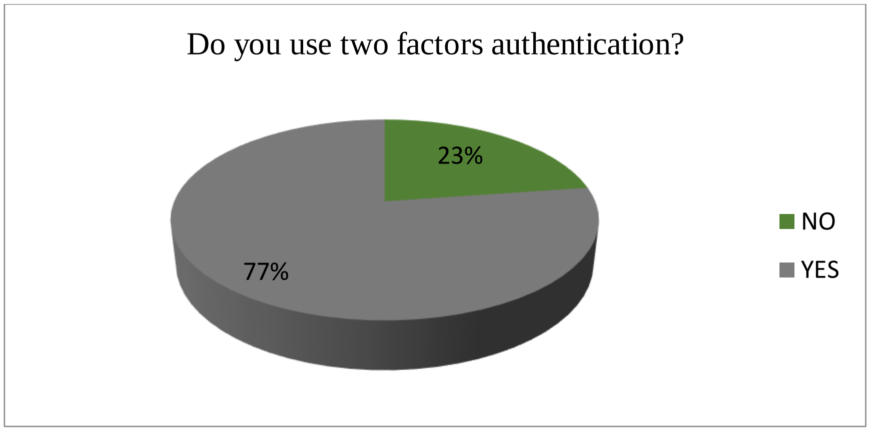
Many online banking and financial transaction sites require users to register for an online account with a username and password to perform money transactions. However, maintaining multiple accounts with different organizations can be inconvenient. Security is crucial for these transactions, as passwords that are easily hacked can result in financial loss and personal information being exposed to hackers. Identity theft is a significant risk associated with electronic payment systems, which can be prevented by using virus protection or firewalls for your computer and carrying out transactions on secure websites. Smart card theft can also result in the expenditure of your entire bank balance. While electronic payments are resistant to forgery, numeric keys used in the encryption process can be vulnerable to attack. It's essential to be aware of the disadvantages of electronic payment systems as we move towards a paperless environment to avoid electronic security issues [11].

The use of biometrics for Internet banking is becoming more convenient and accurate than traditional methods such as passwords or PINs. Biometrics ensures that the user is authenticated and linked to the specific transaction, whereas a password or token can be used by an unauthorized person. Biometrics is also convenient as it eliminates the need to carry or remember anything, and it provides positive authentication. Additionally, it can provide an audit trail, and it's becoming more socially acceptable and cost-effective.

3. CADETS' PERCEPTION ON INTERNET BANKING

In order to enphasize the risk perception of internet banking usage among cadets an quantitative analysis was done. The study has been made on 66 cadets, under the age of 22 to 25. In order to find if the subjects use a second step or an alternative way to utilize Internet Banking, a question was dedicated to this issue, and even if we talk about a developing country with OTAN standards, the answers revealed that 22,7% (Figure 1) do not use a second step or an alternative for authentication.

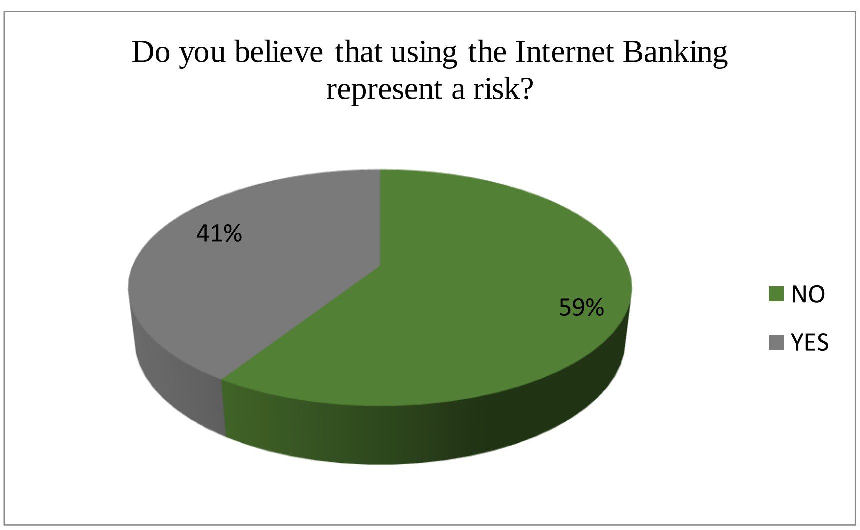
Figure 1. Proportion of cadets using two factors authentication



Young cadets may use second-step authentication in IB, but it depends on the individual and their level of concern for security. This was the first step that determined the present analysis. Security is an actual subject in every daily thing and many of us have doubts about what technology comes with. Based on the studies that have been done by Pooja Malhotra, Normalini Md Kassim, T. Ramayah(26 December 2014) in India[12] and by Hamid Reza Khedmatgozar (24 March 2021) in Iran[13], I will introduce all those concepts to analyze and compare how young cadets from "Nicolae Bălcescu"- Land Forces Academy, had entry in this digital era.

Every cause has an effect. In today's world, digitalization is transforming the way businesses operate, interact with customers, and compete in the global market. With the increasing availability of digital technologies, businesses can streamline their operations, automate tasks, and provide more efficient services to their customers. This process is present in the bank system also, but people embraced this new method with big confidence, as is shown in Figure 2. Banks are vulnerable to various types of fraud, including identity theft, check fraud and wire fraud, but they also hold vast amounts of personal and financial data about their customers, and protecting this data from unauthorized access or theft is crucial.

Figure 2. Perception of risk while using internet banking among cadets

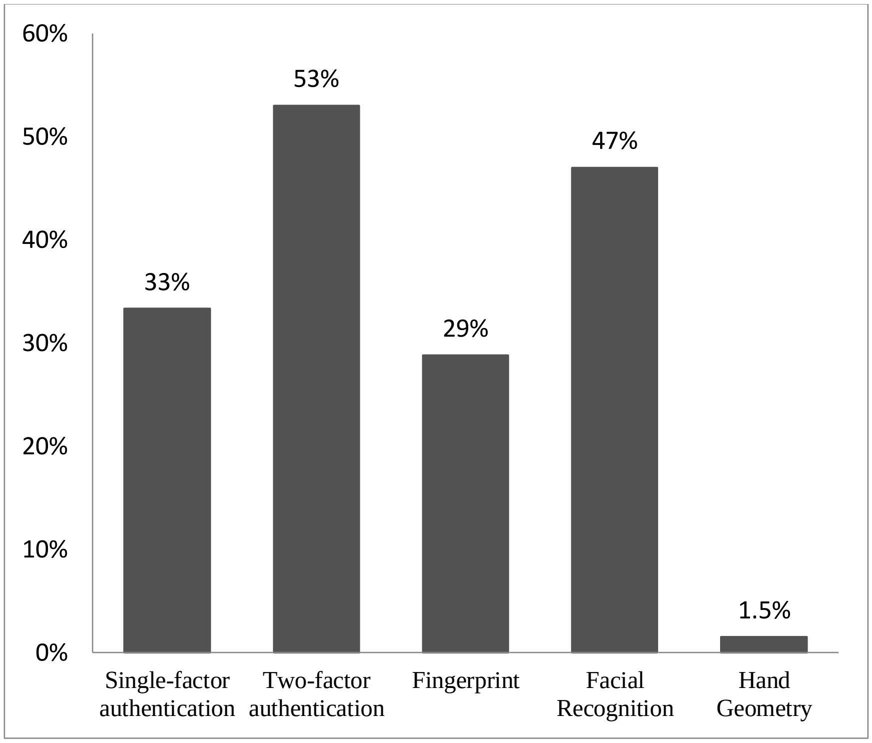


To mitigate these risks, banks and financial institutions must implement robust security measures such as multi-factor authentication, encryption, firewalls, and antivirus software. They should also provide customers with education and awareness programs to help them recognize and avoid phishing scams and other cyber threats.

Customers can also take steps to protect themselves, such as using strong passwords, avoiding public Wi-Fi networks, and monitoring their accounts regularly for unauthorized activity.

In figure 3, are presented the type of authentication cadets use. Because this is an area that is very different and depends on a lot of factors, many answers were permitted.

Figure 3. Authentication methods



As can be seen in Figure 3, most of the cadets use two-factor authentication methods (53%), followed by facial recognition(47%) and fingerprint (29%). Despite these numbers, there are still cadets that do not use a second step authentication in IB because they do not consider it a risk.

4. ADVANTAGES AND DISADVANTAGES OF USING BIOMETRIC

The Technology Acceptance Model (TAM) is a popular model used in the field of information technology to explain how users perceive and adopt new technologies. TAM suggests that user acceptance of new technologies is influenced by two main factors: perceived usefulness and perceived ease of use.

In the context of Internet banking, perceived usefulness refers to the extent to which users believe that Internet banking will help them achieve their financial goals, such as managing their accounts more efficiently, paying bills, or transferring funds. Perceived ease of use refers to the extent to which users perceive Internet banking to be user-friendly and easy to navigate. Biometrics for identification in Internet banking has several advantages, including the ability to identify a user based on their unique traits. Unlike tokens or passwords which can be lost, stolen, forgotten, or shared, biometrics offer a more secure and convenient way to authenticate users. Biometrics also promises to be fast, accurate, reliable, and cost-effective for various applications. The user-friendly nature of biometric authentication is also important, with quick and easy methods such as taking a picture or using a fingerprint scanner becoming more common. As biometric technologies continue to improve and become more widespread, the burden of dealing with multiple levels or instances of authentication will become less of an issue for users.

As we dig more into this subject, there are also some security pitfalls. Cybercriminals and cybersecurity issues are ranked top threats for banks because it is easy to attack when you do not know the risk, but easier when you are not aware that technology has a big "dark package". Customers should worry about privacy also. In the context of IB, consumers can be scrounged their identity when using the service by the intervention of hackers and the banks to share customer records with others for another purpose [14]. This risk is recognized in the studies of Aldas-Manazano et al. [15], Lee [4], Nguyen and Nguyen [16], and Takieddine and Sun [10] as one of the perceived risk dimensions in IB adoption[17].

5. HOW SAFE IS ’’SAFE’’?

The adoption of these new techniques is a process that can not be canceled because of the times we live in, but I consider security as a very big issue. A study made in the last few years shows that different departments of banks area are in the top sectors affected by cybersecurity threats, as it follows: second place: Digital service providers (13%), fourth place: Services (12%) and the fifth place: Finance/banking (9%)[18]. In order to make cadets aware about what are the risks and what should know before trusting, I recommend an extra step in authentication and use of different PINs and passwords.

Threats against data can be mainly classified as data breaches (intentional attacks by a cybercriminal) and data leaks (unintentional releases of data). Internet banking requires customers to share sensitive personal and financial information online. This information may be vulnerable to unauthorized access or misuse, compromising customer privacy. Combined with technology failures and lack of knowledge, we are offering our personal data without even thinking. When you create an account in IB, there are some terms and conditions that you have to accept. People often agree with it but never read it.

As a recommendation, a new trend in technology comes in support: PasskeysPasskeys represent a widespread substitute for traditional passwords within various industries. Rather than using a password for authentication, passkeys are individualized to specific devices like laptops, computers, or smartphones. These passkeys enable access to your account through on-device authentication methods, such as Face ID, fingerprint scanning, PIN lock, device password, or even a physical biometric authentication device.

Generating a passkey involves the creation of a private cryptographic key on your device, while a corresponding public key is sent to the respective service provider, such as Google. When a sign-in request occurs, Google contacts your device to verify key matching. This verification requires your device's authentication, thwarting any attempts by malicious entities to interfere in the process unless they have physical access to both the device and the authentication process. This emphasizes the necessity of safeguarding your device's passcode.

As long as you ensure your devices are within your control and maintain the security of their authentication methods, passkeys offer a convenient solution. They alleviate concerns regarding passwords and two-factor authentication (2FA). Accessing your Google Account becomes as straightforward as completing a purchase using Apple Pay or Google Pay. Embracing passkeys for multiple accounts enhances the simplicity and security of your digital presence.

In the future, transitioning to a passkey renders your conventional account passwords ineffective. However, to facilitate this shift, companies like Google permit users to employ their passwords as a backup option. If apprehensive that an older device lacks support for biometric authentication, relying on a password as a fallback remains a viable option [19].

6. CONCLUSIONS AND FUTURE WORK

Using Internet banking comes with certain risks, and users need to be aware of these risks and take appropriate measures to mitigate them. By taking these measures and being aware of the potential risks of Internet banking, users can enjoy the convenience and benefits of online banking while also protecting their financial information and assets. As survey responses show, despite being part of Generation Z, cybersecurity awareness needs to increase among the cadets in order to minimize the risks. Passkeys have the potential to reduce the risks associated with password reuse, which is a common practice among users who find it difficult to remember multiple passwords. With passkeys, users can generate a unique authentication code for each login, making it more difficult for hackers to gain access to multiple accounts even if they have obtained one passkey. This can greatly reduce the impact of data breaches and improve the security of online transactions.

While our study showed that authentication is currently the primary security control mechanism in Internet banking, it may not be sufficient for high-risk transactions that involve accessing customer information or transferring funds to third parties. Therefore, we plan to further investigate different security aspects of Internet banking and develop an integrated authentication model using innovative technological approaches to better address the security challenges of this system.

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MICHAEL JORDAN: THE ULTIMATE MARKETING MACHINE IN SPORTS

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Abstract:
Michael Jordan is broadly recognized as the greatest basketball player to ever play this sport, but his impact extends far beyond the court. Jordan's influence on sneaker culture is undeniable, and his collaboration with Nike has led to some of the most iconic and popular sneaker releases of all time. My appreciation for the brand Michael Jordan created made me wanted to write this paper as a homage to him. This paper aims to emphasize the outstanding marketability this athlete produced during his career. The objectives of this article are to present the basketball shoe market in the 80s (before MJ signed with Nike), the deal between Nike and Jordan, the consequences of the deal and how it was transformed into the giant brand that it is today.

1. INTRODUCTION

Nike is an American multinational corporation renowned for its involvement in the design, creation, and marketing of athletic footwear, clothing, gear, and accessories. Established in 1964 by Phil Knight and Bill Bowerman, with its headquarters situated in Beaverton, Oregon, Nike ranks among the globe's leading providers of athletic footwear and attire. Its noteworthy presence within the sports sector further solidifies its position.

Nike's basketball division is a branch of the company that specifically focuses on basketball-related products, such as basketball shoes, apparel, and accessories. The division has a long history of creating innovative basketball shoes that are designed for players to achieve the optimal performance on the court. Some of the most popular basketball shoe models from Nike include the Air Jordan line, the Kobe line, the LeBron line, and the KD line.

The Air Jordan line, in particular, has become one of the most iconic and successful basketball shoe lines in history. The line was first introduced in 1984 and was created in collaboration with basketball superstar Michael Jordan. The Air Jordan shoes are known for their innovative patterns, designs, high-quality materials and association with Michael Jordan's legendary career.

2. NIKE'S BASKETBALL DIVISION AND THE MARKET SITUATION IN THE 80S

In the year 1972, Nike unveiled its inaugural basketball sneakers, the Bruin and Blazer models. Crafted from leather, these models laid the foundation for a lasting heritage. Nike Basketball diligently refined these two designs, subsequently introducing suede variations of the Bruin and Blazer, along with a leather iteration of the Blazer Low in the subsequent year. Yet, it wasn't until 1982 that Nike made its mark with the introduction of the Air Force 1. During this time, the Nike Basketball division was not only emerging as a prominent sneaker brand but also establishing itself as a significant contender within the basketball shoe market. Despite the uprising success Nike was having at that time, they were still behind other competitors such as Converse and Adidas, which were first and second in the basketball shoe producing market. According to the Air movie, released this year, Converse's share market in 1983 was 54%, while Adidas had 27% and Nike only 19%.

Converse was a popular brand in NBA in the 1980s, particularly due to the popularity of their iconic basketball shoe, the Converse Chuck Taylor All-Star. Many NBA players, including Larry Bird, Julius Erving or Magic Johnson wore the Chuck Taylor All-Star on the court during games. One of the main reasons for the Chuck Taylor All-Star's popularity was its classic design and comfort. Another reason for the Chuck Taylor All-Star's popularity was its association with popular culture. The shoe was not only worn by NBA players but also by musicians, actors, and other celebrities, which helped boost its popularity and make it a symbol of coolness and style.

In addition to the Chuck Taylor All-Star, Converse released other popular basketball shoes during the 1980s, including the Converse Weapon and the Converse Fastbreak. These shoes were also worn by many NBA players and helped solidify Converse's position as a leading basketball shoe brand.

Adidas was a popular brand as well in NBA in the 1980s, particularly due to their innovative designs and the endorsement of some of the league's top players. In the early 1980s, Adidas released the Top Ten, a basketball shoe that was popular among NBA players for its sleek design and comfortable fit. The shoe was endorsed by several high-profile players, including Kareem Abdul-Jabbar, who wore the Top Ten during the 1983 NBA Finals.

However, it was the release of the Adidas Superstar that really helped increase the brand's popularity in NBA during the 1980s. The Superstar was first introduced in the 1970s but experienced a resurgence in popularity during the 1980s thanks to endorsements from several NBA players, including Isiah Thomas, Moses Malone, and James Worthy. The shoe's iconic design, which featured a leather upper and distinctive rubber shell toe, became a symbol of style and coolness both on and off the court.

In addition to the Top Ten and the Superstar, Adidas also released other popular basketball shoes during the 1980s, including the Forum and the Conductor. These shoes were also endorsed by top NBA players and helped further consolidate Adidas's position as a leading basketball shoe brand during the era.

Reebok was another brand that entered the market in the 1980s with its innovative Pump technology, which allowed the wearer to adjust the fit of the shoe by pumping air into it. While Reebok struggled to gain a foothold in the basketball shoe market at first, the Pump technology eventually caught on and helped the brand gain a larger share of the market.

Overall, the basketball shoe market in the 1980s was highly competitive, with each brand striving to create innovative designs and sign endorsement deals with top basketball players to gain an edge over the competition.

Being third in the shoe market was an important achievement for Nike, but the fact that they were lacking innovation and popularity among the great NBA players, made them rethink their strategy.

In 1984, Nike, Inc. faced the possibility of discontinuing its basketball shoe division due to low sales. Considering this, Marketing VP Rob Strasser, in collaboration with co-founder and CEO Phil Knight, assigned the responsibility to Sonny Vaccaro, Nike's basketball talent scout, to identify a fresh spokesperson for Nike's basketball footwear.

2.1 Sonny Vaccaro

Figure 1. A picture of Sonny Vaccaro and Michael Jordan

Before going to the next chapter, I would like to mention one of the most prominent figures in the basketball world, Sonny Vaccaro. He held a role as a sports marketing executive, collaborating with basketball divisions of Nike, Adidas, and Reebok, facilitating the acquisition of signature athletes for these brands.

Vaccaro is notably recognized for playing a pivotal role in steering negotiations to Nike's advantage, leading to the enlistment of Jordan's services prior to his debut NBA season.

3. THE DEAL THAT MADE HISTORY

As the Nike executives deliberate over potential choices from the 1984 NBA draft, they initially viewed Michael Jordan, the third pick, as beyond their reach. This was due to his Adidas affiliation and the perception that his cost would strain the basketball division's limited funds. However, a pivotal change occured when Vaccaro watched Jordan's exceptional gameplay footage alongside an Arthur Ashe advertisement promoting his Head rackets. As a result, Vaccaro became resolute in his belief that Nike should actively pursue this exceptional talent, whom he regarded as a generational asset, foreseeing a mutual elevation for both the brand and the athlete. Jordan displayed initial hesitance. During his time in college, he sported Converse due to their endorsement agreement with Tar Heels coach Dean Smith. Beyond that, his off-court choice was Adidas. Remarkably, Jordan had never worn Nike footwear prior to the company's outreach to him.

David Falk, who was his agent, was aware of the incredible potential Michael Jordan had and opted to take a bold stance, presenting substantial requests to shoe companies in exchange for Jordan’s services. These demands encompassed the creation of his personal shoe line, substantial initial advertising backing, and a share of forthcoming sales. This approach was unprecedented, constituting a remarkable arrangement for a rookie participating in a team sport, especially considering the inherent vulnerability of a career reliant on physical performance, susceptible to potential setbacks such as a knee injury.

“We decided to stretch the envelope", Falk said. "Instead of calling up the companies and asking them how much they would pay Michael Jordan, we called them up and asked them to make a presentation and explain what they could do to promote him. This got a lot of quizzical replies.

After sharing a meal with George Raveling, who had coached Jordan during the Olympic tournament, and enlisting his support in the pursuit, Vaccaro embarks on a journey to Wilmington, North Carolina. Here, he successfully persuades Michael Jordan's mother, Deloris, that Nike could offer the level of attention and recognition that he might not receive from his preferred brands, Adidas and Converse.

Despite encountering initial resistance from Jordan's agent, David Falk, concerning communication with the player's family, Vaccaro soon discovers that the Jordans have arranged a meeting at Nike's headquarters in Beaverton, Oregon, for the upcoming Monday. In response, Vaccaro and Strasser set the wheels in motion for their presentation. Additionally, they task shoe designer Peter Moore with crafting a prototype, which Moore dubs "Air Jordan," in reference to Nike's Air Sole technology. In the meantime, Knight agrees to allocate the entirety of the basketball division's $250,000 budget toward securing Jordan's involvement.

Figure 2. The first pair of Air Jordan 1 (the prototype designed by Peter Moore)

Nike orchestrated a visit to Oregon for Jordan and his parents, with the purpose of presenting Strasser's proposal. During this meeting, Strasser highlighted Nike's triumphant advertising initiatives and expounded upon the strategy to enhance Jordan's public image. Moore showcased prototype attire along with a pair of shoes fashioned in the iconic red, white, and black colors of the Chicago Bulls. However, a minor complication arose concerning the design, stemming from NBA regulations stipulating that players were restricted to wearing white sneakers exclusively during that period. The NBA was going to fine Michael Jordan $5,000 every time he would wear the shoes (subsequently they really did it). However, Nike was willing to pay the fines and have the shoes stand out from the crowd.

Subsequent to the meeting involving Jordan and his parents, Vaccaro discovers that Jordan had already been presented with a standing offer from Adidas, amounting to $500,000. Falk, his agent, pressed Nike to match this sum while also including a share of the revenue. In response, Nike countered with an offer of $500,000 and a smaller share. Meanwhile, Adidas was also prepared to sweeten their deal by offering Michael a Mercedes Benz 380SL—a concession that Nike should have potentially considered as well.

Nonetheless, Vaccaro receives a phone call from Deloris, conveying that Michael would be willing to sign with Nike under the condition that he would earn a percentage from each Air Jordan sold—a stipulation that was unparalleled at that time. On October 26, 1984, Michael Jordan signed a five-year, US$2.5 million deal (500.000$ per year) with Nike, which fulfilled all the requests made by Jordan and his family.

What makes this deal even more insane is the fact that at the time, no one was earning that much. In the early 1980s, the landscape was such that only Kareem Abdul-Jabbar held a six-figure shoe deal worth $100,000, courtesy of Adidas. Nike, still relatively modest in size, paled in comparison to industry giants like Converse, which had largely dominated the basketball shoe market throughout the 1970s.

The significance of the deal was magnified due to the prevailing challenge of marketing African American players in 1984, especially within team sports such as basketball. In fact, Nike incorporated several safeguards into its initial contract with Jordan, including the option to discontinue the shoe line if specific sales benchmarks weren't achieved. This underscored the cautious optimism surrounding this pioneering partnership.

Some of the conditions he had to achieve in the following years in order to keep being the image of Nike were:

- Must get rookie of the year.
- Become an All Star.
- Average 22 points per game.

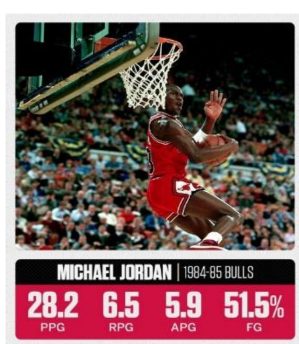
Let me remind you that Michael Jordan had not even played in NBA before and the deal Nike made was a huge gamble.

4. THE CONSEQUENCES OF THE DEAL

I was telling you about the on-field requirements MJ had to meet for the shoe line to continue. Well, he did all of them in his first year.

Michael Jordan averaged 28.2 points, 6.5 rebounds and 5.9 assists in 82 games in his rookie season in 1984-85. He was selected to play in his first All-Star game and won the Rookie of the Year award.

Figure 3. MJ's stats in his rookie year



Guillermo García reported in MARCA that on April 1, 1985, Nike released a white, red and black sneaker that is now sports history: the Jordan 1.

A pair of boots that the player had already used in some games and in the dunk contest of that same season and that came out with a retail price of 65 dollars. That was a market value that has multiplied by three times today. The sneakers went on sale in just six states and from the beginning exceeded any expectations on the part of the Oregon brand.

The Air Jordan was an instant success, thanks in part to its innovative design and use of technology. The shoe featured Nike's Air cushioning system, which provided unprecedented comfort and support for basketball players. The shoe's unique design, which included a bold red and black colorway, also helped to set it apart from other basketball shoes on the market.

Talking about the sales expectations, the CEO of Nike, Phil Knight set the target for $3 million in the first four years. Just two months into the sneaker's release, Nike sold $70 million worth of Air Jordans by May. Ultimately, the Jordan Brand had made the company $130 million by the end of the year in 1985, making their $500,000 contract with Jordan one of the great bargains of all time.

"Fans were looking to see if he would wear the forbidden shoes in a game. Cameras were on his sneakers, and the nation was talking about the Air Jordans. With no threat of a fine, there is no controversy," Thilo Kunkel (Associate Professor & Director Sport Industry Research Center at Temple University & Founder at SPRTER) revealed in Temple University article.

The Air Jordan 1 was unlike anything that had come before it — it was a high-top basketball shoe with bold colors and a distinctive Nike swoosh. The shoe was banned by the NBA for not meeting uniform standards, but Jordan continued to wear it and Nike used the ban as a marketing tool, positioning Jordan and his sneakers as rebellious and anti-establishment.

The partnership between Nike and Jordan instigated a paradigm shift in athlete endorsements, setting a precedent for athletes to secure lucrative sponsorships. Jordan's influence paved the path for numerous other athletes to amass substantial earnings through endorsements.

Jordan's magnetic charisma, exceptional skills, soaring athleticism, and unwavering determination to succeed defined his basketball career. He clinched six championships with the Chicago Bulls and played a pivotal role in both popularizing and commercializing basketball on a global scale. In alignment with the team's colors, Nike introduced Jordan's inaugural signature shoe, the Air Jordan 1—a design that boldly deviated from the norm of predominantly white sneakers, opting for a black and red motif that disrupted conventions.

Throughout Jordan's playing years spanning from 1984 to 2003, a fresh iteration of the Air Jordan sneaker was launched annually, each eagerly awaited by sneaker enthusiasts and basketball aficionados alike. The Air Jordan line evolved into a cultural phenomenon, inducing people to queue up for hours or even camp out overnight to acquire new releases. Such was the fervor surrounding these shoes that they often commanded resale prices significantly surpassing their original retail value.

4.1 Redefining Athlete Endorsements

"If you want to play like Mike, you must buy his sneakers, was the message in Nike's marketing strategy. Consumers believed buying his shoes could improve their game. The company gained brand exposure and developed a reputation for releasing high-quality products. Thus, they could raise sneaker prices. It also gave Jordan a worldwide platform to grow his brand," Thilo Kunkel said, as I was mentioning him earlier.

"Be Like Mike" became a known slogan in the '90s. Jordan's image seamlessly extended to brands like Hanes, Coca-Cola, Wheaties, Gatorade, and McDonald's, markedly enhancing his market desirability. Nike persisted in featuring his sneakers prominently in commercials, exemplified by the memorable 1988 collaboration with filmmaker Spike Lee, where the Bulls star confidently asserted, "It's gotta be the shoes."

In subsequent years, Nike formalized a contract with Jordan, granting him a continuous entitlement of 5% royalties from every sale of Jordan Brand shoes. This enduring arrangement stands as a testament to Jordan's enduring impact. His trailblazing influence created a path for other sponsored athletes, who, bolstered by the expansive reach of social media, have garnered even greater influence. While NCAA athletes were once barred from reaping sponsorship benefits, the landscape evolved, allowing them to access financial compensation through NIL (name, image, and likeness) deals. This transformation empowered them to leverage social media for networking and cultivating their personal brand.

In essence, Jordan's legacy illuminated the tremendous sway athletes hold as endorsers. The monumental triumph of Nike's partnership with Jordan prompted a widespread shift in marketing strategies, with more brands pivoting toward spotlighting individual athletes rather than entire teams.

Figure 4. Expectations in 1984 vs Reality in 2022

5. JORDAN BRAND’S TODAY SITUATION AND CONCLUSION

In 2020, according to Statista, the Air Jordan brand accounted for approximately 58% of the US basketball shoe market share. This reflects the continued popularity of the Air Jordan line among consumers, particularly among younger generations who may not have witnessed Michael Jordan's playing career but are drawn to the shoe's iconic design and cultural significance.

Jordan Brand (introduced in 1997 by Michael Jordan and Nike) reached over $5 billion in sales in 2022, of which Michael Jordan made $150 million—nearly double the $86.7 million he earned in his entire NBA career.

Consider that in 2012—nine years after Jordan played in his final NBA game—Air Jordan sneakers, per ESPN, “made up 58 percent of all basketball shoes bought in the U.S. and 77 percent of all kids’ basketball shoes.” Jordan has earned about $1.7 billion off the court, per data compiled by Forbes.

Jordan's exceptional marketability hasn't unfolded in isolation. Rather, it has instigated a profound reshaping and augmentation of the NBA's marketplace and its players' positions. In 1998, the far-reaching impact of Jordan's influence on the U.S. economy was estimated to be a staggering $10 billion by Fortune Magazine. Dubbed "The Jordan Effect," this figure encapsulated forecasts of how Jordan's presence reverberated across a multitude of economic domains.

These projections encompassed Jordan's role in boosting NBA television ratings, consequently driving up the value of cable and broadcast rights fees paid to the league—a revenue stream shared with players. Jordan's influence extended to swelling gate receipts for NBA games, as well as propelling sales of merchandise, apparel, and various other products. His contributions spanned beyond the court to encompass films, computer games, and video games, all of which contributed to the sweeping economic impact accredited to him.

Jordan’s influence on sneaker culture went beyond just his signature line of shoes. He was known for wearing a variety of different sneakers on the court, and each pair he wore became an instant sensation. His shoes were not just for basketball players — they were a fashion statement that transcended sports.

The impact on sneaker culture was not just due to his popularity as a basketball player, but also to the marketing and storytelling behind his shoes. Nike used innovative advertising campaigns and collaborations with popular artists and designers to make each new Air Jordan release a cultural event.

Today, the Air Jordan line is still going strong, with new releases and retro versions of classic models continuing to sell out quickly. Jordan himself has retired from basketball, but his impact on sneaker culture lives on. His shoes have inspired a generation of sneakerheads, and his influence can be seen in the popularity of sneaker culture around the world.

In conclusion, Michael Jordan’s impact on sneaker culture is undeniable. His collaboration with Nike and the release of the Air Jordan line of shoes changed the way people thought about basketball sneakers and created a cultural phenomenon that continues to this day. Jordan’s success in the world of sneakers can provide valuable lessons for business leaders — the importance of innovation, storytelling, and marketing, as well as the power of a strong personal brand.

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DIGITALIZATION OF THE TOURISM SECTOR IN BULGARIA

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Abstract:
Tourism, despite its impalpable nature, is a cornerstone industry, responsible for 10% of the pre-pandemic global gross domestic product. In order to ensure it does not fall behind the times, the travel branch must adapt to the changes. The increased usage of electronic devices for communication intrinsically changes the way we do business and spend our leisure time, something which deeply interests tour booking companies and the hospitality sector as a whole.
In this paper, a more detailed look into the intricacies of the relationship between digitalization and tourism will be taken, specifically in regard to Bulgaria's economy. Digitalization as a term will be clarified and its impact on the tourism industry will be researched. Bulgaria's ranking among the other European Union nations concerning digitalization will be reviewed and the terms Industry 4.0 and Tourism 4.0 will be taken into account, concluding with a SWOT analysis and relevant takeaways on the situation and its future improvement.

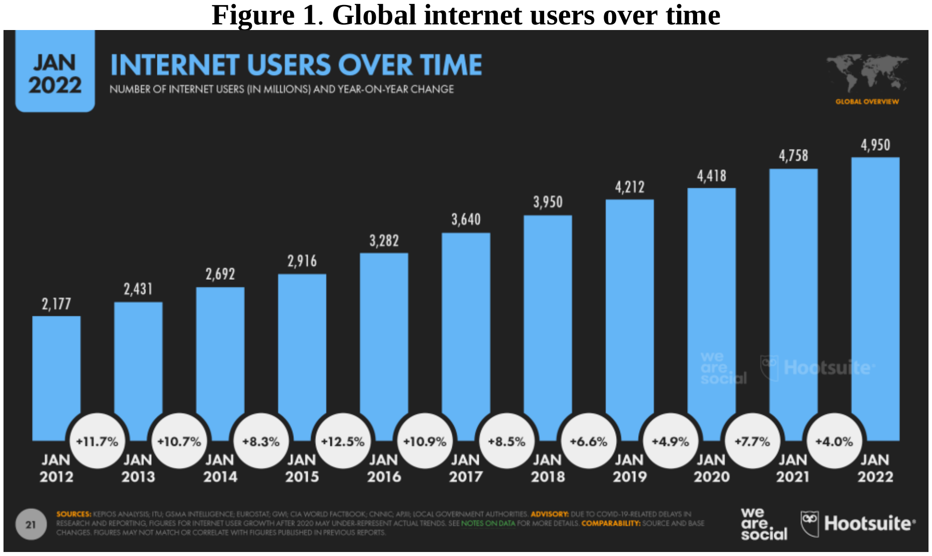
Keywords: Digitalization, Tourism, Bulgaria, Industry 4.0, Tourism 4.0

1. DEFINING DIGITALIZATION

Digitalization is the process of implementation of digital technologies with the goal of boosting the efficiency of the processes in a given enterprise, as well as appreciation of the marketable services. With the development and mass distribution of technologies, more and more sectors of the economy are made digital at both global and national level. The tourism and hospitality sector is not an exception to the aforementioned trend, as it is characterized by its dynamicity, high level of competition and an increasing demand.

Digitalization is also viewed as a process of transferring information from traditional sources to digital ones, as well as an environment, integrating digital resources (Olga, 2021). Characteristic for digitalization is the provision of access to information in the global network simultaneously to many users without time limitations (Tsanevska, 2014).

Figure 1. Global internet users over time



Source: https://datareportal.com/reports/digital-2022-global-overview-report

2. THE IMPORTANCE OF THE RELATIONSHIP BETWEEN DIGITALIZATION AND TOURISM

In this day and age, more and more people use online applications on their mobile phones to craft their perfect family holiday. According to data by international research, 46% of tourists from Europe organized their travels online in 2017, and during the next 2 years, this percentage jumped to 60%. In 2018, Internet users were above 4 billion, and those using any type of mobile service were above 5 billion. Digitalization transforms the tourism industry palpably, and now almost every tourist organizes their vacation through the Internet. Half of all travels begin by searching for information through a mobile device.[1] The digital method is preferred due to the prompt and intuitive access to crucial information and the high level of service personalization. This is all due to the current trend of digitalization of information.

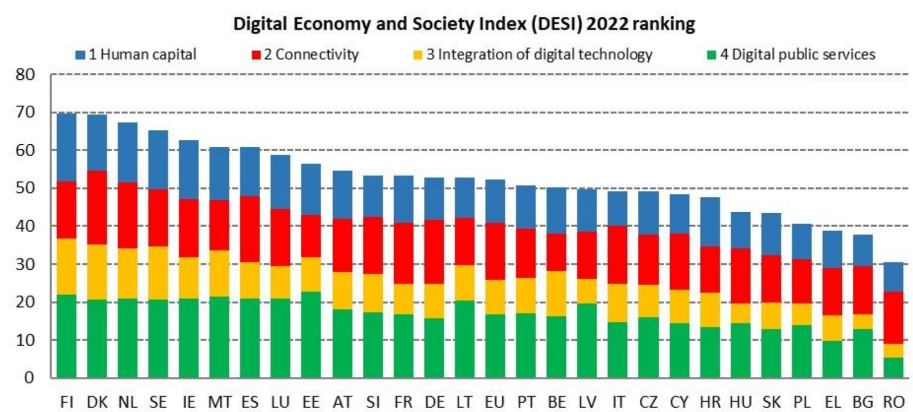
According to Varadzhakova (2019), as a result of the process of digitalization in tourism, four main trends can be noted:

- tourists giving feedback by sharing their experiences with a given tour company or a hotel in the form of comments or a rating between 1 and 5 stars, resulting in the stimulation of competition;
- implementation of specialized software;
- transferring completely to virtual payments;
- usage of mobile applications.

3. IMPORTANCE AND GOALS OF THE DIGITALIZATION IN BULGARIA

The process of digitalization, as already noted, aims at intensifying the competitiveness of the market, together with forming new behavioral approaches, directed at the way a decision is taken or a commodity or a service is purchased. The accurate implementation of the innovations will affect the livelihood of many. Indisputably, this accuracy must be assessed periodically. This can be done through the "Digital Economy and Society Index".

Figure 2. Digital Economy and Society Index (DESI) 2022 ranking



Source: https://ec.europa.eu/commission/presscorner/detail/en/qanda_22_4561

As a committed member of the European Union, Bulgaria is held to high standards due to its participation in the single market. However, in spite of the given importance to the process of digitalization, according to the DESI ranking for 2022, Bulgaria is, regretfully, placed at the 27-th position out of 28 EU member states. That way, a clear picture of the health of digitalization in the tourism branch is given. Even though the level of connectivity and digital public services is fairly satisfactory, a severe lack of human capital can be observed. Furthermore, in respect of the "Integration of digital technology" criterion, Bulgaria is at the very last place.

[1] https://www.tourism.government.bg/bg/kategorii/novini/ministur-angelkova-suzdavame-postoyanen-suvet-za-digitalizaciya-v-turizma

To understand the situation better, especially regarding the human capital, in an interview with the Bulgarian National Radio the vice-rector of the Varna University of Management, professor Stanislav Ivanov, and docent Maya Ivanova, state that for the last 10 years the number of students who choose baccalaureates related with tourism has fallen with 40%. In 2010, they were around ten thousand, while currently, they are about six thousand. Among the factors is the insufficient payment, the high degree of seasonality and the hard blow dealt by the COVID-19 pandemic.[2]

4. THE ADVENT OF INDUSTRY 4.0 AND TOURISM 4.0 IN BULGARIA

This trend of lagging behind is one of the reasons The Ministry of Economy and Industry of Bulgaria created the "Conception of digital transformation of the Bulgarian industry (Industry 4.0)" for the so-called Fourth Industrial Revolution. Its fundamentals include total connection through modern digital technologies of the processes in the enterprises, in order to create positive financial value. The Conception's aim is to create the needed prerequisites for modernization, automatization and competitive positioning of the Bulgarian economy in the medium and long-term (2017-2030)[3]. The expectations for the Conception are to stimulate foreign investments in different sectors of the economy and the betterment of the already existing economical policies. What is more, during the "Digital transformation of tourism" conference, organized by the National Board of Tourism, Bulgaria's Minister of Tourism highlighted the keystone significance of digitalization of tourism, stating that "…digitalization is not just a change, but an obligatory transformation, through which the tourism must go through, in order to be effective and competitive."

The application of digitalization in the tour industry is defined as *Tourism 4.0*. Digital technologies influence the business models of tourism. The real world of services is intertwined with the virtual world of information and communication technology, enhancing and optimizing traditional processes (Varadzhakova, 2017). Real applications of this are already present at several hotels in Bulgaria. According to professor Stanislav Ivanov and docent Maya Ivanova, three of them already make use of robots while conducting business. Two of these hotels are at the Black Sea resort Golden Sands, the third one is in the capital city Sofia. Another good example is one of the hostels in Varna, which has been communicating the details about the booking with its clients remotely for several years already.

Figure 3. Industry 4.0 SWOT analysis

STRENGTHS	WEAKNESSES
• **ICT Sector:** Presence of leading international and well-developed local companies with scientific centers in the country. Yearly growth of the number of companies and income; • **Established production enterprises**, which are part of international company chains and technological leaders; • **E-infrastructure for scientific and academic research:** established and currently providing the opportunity of structuring the scientific community and developing innovational environment for	• **Public policy:** insufficient application of public policies, aimed at promoting economic growth thanks to knowledge and innovations; • **Low spending for scientific research:** way below the average of the European Union and ineffective spending of the resources; • **Human capital:** lack of manpower, "brain drain", high level of concentration of ICT in Sofia, low level of competency and trade; • **Implementation of ICT:** low level of automatization,

[2] https://bnr.bg/varna/post/101429445/avtomatizaciata-v-turizma-shte-preodolee-krizata-za-kadri
[3] Conception of digital transformation of the Bulgarian industry (Industry 4.0), available at https://www.mi.government.bg/files/useruploads/files/ip/kontseptsia_industria_4.0.pdf

- breakthrough scientific achievements; **ICT infrastructure:** well-developed with high-speed and extensive access; **Usage of the Internet:** at a high level by students and university graduates; **Standardization** with the European standards ISO with the BDS (Bulgarian State Standard); **Access to European programs**, for example Horizon 2020.	- implementation and usage of ICT; **Missing separate segment of ICT** for the industry; **Insufficient application of modern managerial methods** – lack of knowledge and experience in the application of TQM, Lean 6 Sigma, GMP, KPI etc.
OPPORTUNITIES	**THREATS**
Markets: increasing access to the internal, the European and the global market; **Attracting** foreign experts, such as those from the Bulgarian diaspora; **Direct and foreign investments:** opportunities for technological absorbing of investments; **A significant number of ICT specialists;** **Usage** of good European practices.	**Digital “exclusion”** of the remote, poorly populated and rural regions, as well as people with disabilities; **Leakage of knowledge and technologies:** registering more of the developed patents abroad, thus becoming property of foreign companies; **Worsening of the general business environment** and the lack of human capital.

Source: Conception of digital transformation of the Bulgarian industry (Industry 4.0), adapted by the authors, available at https://www.mi.government.bg/files/useruploads/files/ip/kontseptsia_industria_4.0.pdf

After a thorough study of the Industry 4.0 SWOT analysis, it can be concluded that the uncovering of the full growth potential of the Bulgarian industry is not possible without accurate, timely and purposeful measures by the state and proactive actions by the private business.

5. CONCLUSION

Digitalization is an instrument which provides access to information in the global network. The process of digitalization is an essential matter for the general economy, since it ensures the competitiveness of the Bulgarian market, and, in relation to the tourism sector, it accounts for 12% of the country’s national GDP. Disappointingly, digitalization in Bulgaria is at a very low level in comparison with the European average, but there currently are many new plans and projects, determined to better the standard of Bulgarian tourism digitalization.

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INFLATION IN VENEZUELA AND ZIMBABWE BETWEEN 2011 - 2021

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Abstract:
Hyperinflation is a destructive economic problem with profound impacts on countries and their populations, an economic catastrophe with far-reaching ramifications. This paper examines the causes and consequences of hyperinflation in Venezuela and Zimbabwe, two countries that have experienced extreme levels of inflation in recent years. The aim is to analyze the economic and social context preceding the inflation crises, identify the factors contributing to inflation, assess the effects on the population and business environment, and evaluate the government's measures to mitigate the crisis. Lessons learned from these cases are also discussed. The economic and social context of Venezuela and Zimbabwe prior to the inflation crises is analyzed, highlighting their potential for growth and the vulnerabilities that led to their economic challenges. The causes of inflation in both countries are examined, including inadequate monetary and fiscal policies, excessive spending, and external factors. The effects of inflation, such as decreased purchasing power, increased poverty, unemployment, financial instability, and social unrest, are discussed. Government involvement in combating inflation is explored, focusing on monetary and fiscal policies, as well as fiscal measures and structural reforms. The effectiveness of these measures in addressing the inflation crisis is assessed, considering their impact on stabilizing prices, restoring confidence, and promoting sustainable economic growth. The paper concludes that robust economic policies, diversification, effective governance, and international cooperation are crucial in preventing severe inflationary crises. It emphasizes the need for comprehensive policy interventions to restore confidence, control inflation, and improve economic and social conditions. The findings provide valuable insights that can be applied in other countries facing similar economic challenges, facilitating informed decision-making and policy formulation.

Keywords: Inflation, Venezuela, Zimbabwe, Monetary Policy, Fiscal Policy

1. INTRODUCTION

Hyperinflation is a complex and destructive economic problem that profoundly impacts a country's economy as well as the lives of people living in that country. It can be defined as a rapid increase in prices that exceeds a certain rate, usually over 50% per month, and can have devastating consequences on the economy and society. Hyperinflation is often caused by macroeconomic factors such as rapid growth in the money supply, budget deficits, or inappropriate fiscal and monetary policies.

Two countries that have suffered from hyperinflation in recent years are Venezuela and Zimbabwe. These two countries have experienced extreme levels of inflation, leading to economic and social collapse. In Venezuela, inflation skyrocketed, reaching an annual rate of over one million percent in 2018, while Zimbabwe experienced hyperinflation in 2008, reaching an inflation rate of over 79.6 billion percent.

The impact of hyperinflation on the population and business environment can be devastating. The rapid increase in prices causes the currency to rapidly lose value, reducing the purchasing power of money and affecting people's ability to buy basic goods. Additionally, hyperinflation can negatively affect the business environment, reducing profitability and forcing companies to close or scale back their operations.

In this paper, we aim to analyze the causes and consequences of hyperinflation in Venezuela and Zimbabwe, identify the measures taken by governments and other institutions to counter these issues, and assess the effectiveness of these measures. We will also discuss the lessons we can learn from these examples and how they can be applied in other countries facing this economic problem. This analysis is important for better understanding hyperinflation and identifying more effective ways to prevent and manage it in the future.

In the following, we will discuss the economic and social context of the two countries in Chapter 1. In Chapter 2, we will present the causes of inflation in both countries, including internal and external factors. Chapter 3 examines the effects of inflation, and the final chapter, Chapter 4, presents the government's involvement in mitigating the devastating effects of hyperinflation in the two countries.

2. THE ECONOMIC AND SOCIAL CONTEXT OF THE COUNTRIES

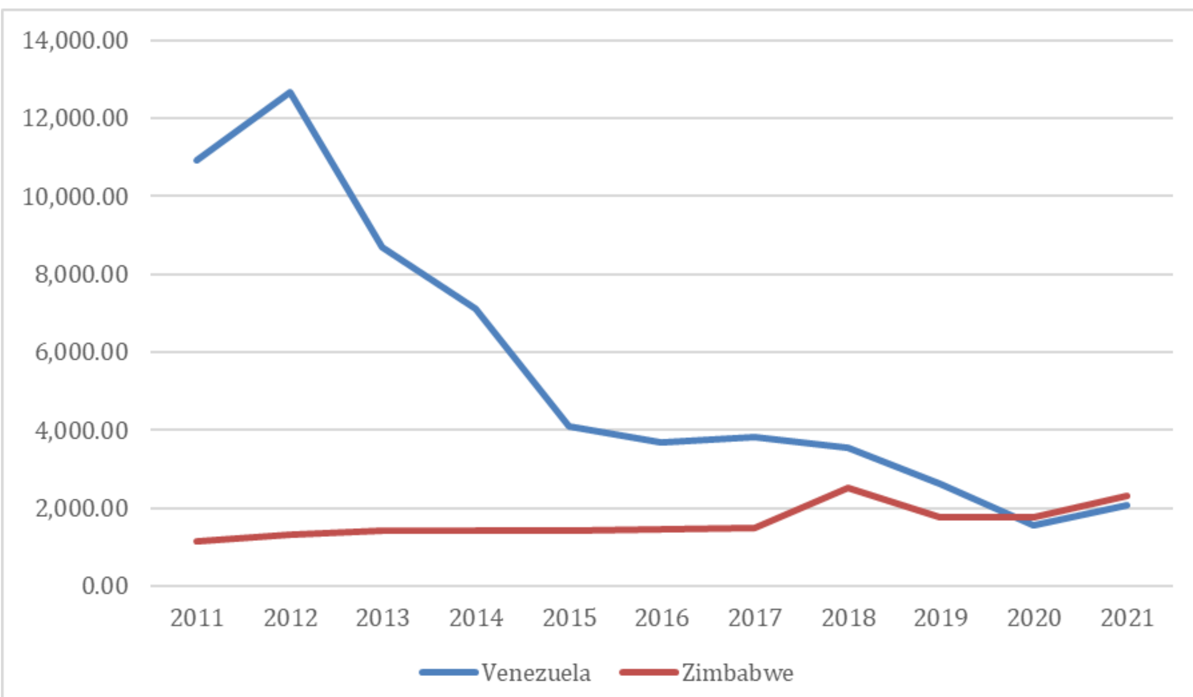
In this chapter, we will analyze the economic evolution prior to the situations in Venezuela and Zimbabwe. Before discussing inflation in Venezuela and Zimbabwe, it is important to examine the economic and social context of these two countries before the onset of the inflation crisis. Several decades ago, Venezuela and Zimbabwe were two countries with growing economies and considerable opportunities for economic development.

Venezuela was one of the wealthiest and most prosperous countries in Latin America, thanks to its natural resources, particularly oil, with solid economic growth and a relatively high level of human development. In 2014, the GDP per capita was around $13,000, placing Venezuela among the middle-income countries in Latin America. In Venezuela, the economy was heavily dependent on oil exports, with the oil industry accounting for approximately 50% of the GDP. Agriculture and industry were neglected, leading to increased dependence on imports and limited development in these sectors.

In Figure 1, we will present the per capita GDP evolution for the two countries during the period 2011-2021. This period coincides with the highest inflation rates recorded in both countries, with the highest inflation rate recorded in Zimbabwe in 2008, exceeding 231 million percent per year, and in Venezuela in 2018, exceeding 65,000 percent.

Figure 1 presents the evolution of per capita GDP for Venezuela and Zimbabwe during the period 2011-2021, expressed in USD dollars.

Figure 1. The evolution of per capita GDP for the two countries in the period 2011-2021, expressed in USD dollars



The evolution of per capita GDP in the period 2011-2021 for Venezuela and Zimbabwe reveals contrasting trends between the two countries.

In the case of Venezuela, a significant decline in per capita GDP is observed starting from 2013. From a relatively high level in 2011 and 2012, per capita GDP sharply decreased, reaching alarmingly low values in

2020. This indicates a major deterioration of the Venezuelan economy during this period, largely attributed to internal issues including weak economic policies, corruption, and political crisis.

As for Zimbabwe, the evolution of per capita GDP is more volatile, with significant fluctuations in the analyzed period. After an initial decline in 2011 and 2012, per capita GDP started to rise, reaching a higher level in 2018 and 2019. However, in 2020 and 2021, the per capita GDP value decreased again, although it remained in a higher range compared to the initial period of analysis. This volatility can be attributed, in part, to the political and economic instability in the country.

Overall, the data suggest that both countries experienced significant economic difficulties in the analyzed period. Venezuela suffered an economic collapse, with a drastic decline in per capita GDP, while Zimbabwe experienced greater volatility, with periods of growth and decline. These data highlight the economic challenges and vulnerabilities faced by both countries and the need for appropriate policies and reforms to stimulate economic development and the well-being of the population.

However, these promising economies began to suffer as a result of weak economic and monetary policies, as well as external factors such as declining commodity prices and international embargoes. In Venezuela, inflation started to gradually increase in the 1980s and 1990s but exploded in 2014 when prices rose by over 60% in a single year. In Zimbabwe, inflation began to rise significantly in the 1990s, and in 2008, the country experienced one of the largest hyperinflations in history, with an inflation rate exceeding 79.6 billion percent.

In summary, the preceding analysis illustrates the economic context preceding the inflation crisis in Venezuela and Zimbabwe. These countries exhibited potential for growth, yet their economies faced vulnerabilities due to inadequate policies and external factors. Venezuela's heavy reliance on oil exports and neglect of other sectors contributed to its economic challenges, while Zimbabwe struggled with mismanagement and external pressures. The experiences of these nations underscore the importance of robust economic policies, diversification, and effective governance to prevent severe inflationary crisis.

3. CAUSES OF INFLATION IN VENEZUELA AND ZIMBABWE

Inflation is a complex economic phenomenon that affects not only the prices of goods and services but also other aspects of the economy and society. In this section, we will analyze the effects of inflation in Venezuela and Zimbabwe from an economic and social perspective.

The causes of inflation in Venezuela and Zimbabwe are different, but there are some similarities between them. In Venezuela, inflation was primarily triggered by inadequate monetary policy and government decisions regarding fiscal policy. The government overspent and financed these expenditures by issuing new money, leading to a significant increase in the money supply and rapid depreciation of the national currency. Additionally, international economic sanctions and declining oil prices contributed to worsening economic conditions and inflation.

In Zimbabwe, inflation was primarily triggered by the flawed monetary and fiscal policies of the government. The government financed expenditures by issuing debt and new money, resulting in rapid growth in the money supply and significant depreciation of the national currency. Additionally, the government's policy of land confiscation led to a significant decline in agricultural production and increased reliance on imports, further exacerbating inflation.

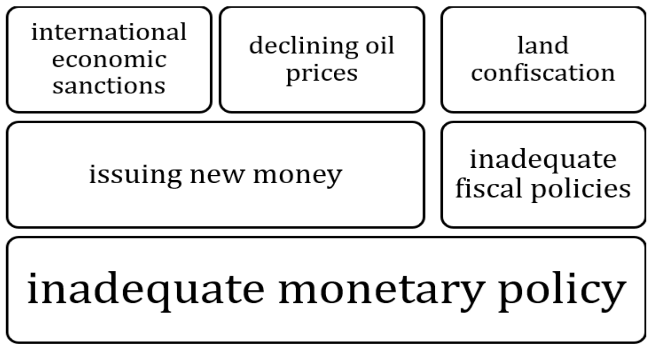
In both countries, the government played a significant role in triggering inflation through inadequate fiscal and monetary policies, excessive spending, and unbalanced economic measures. Additionally, in both countries, declining export prices played a significant role in triggering inflation.

In 2021, annual inflation reached over 1588.51% in Venezuela and 98.55% in Zimbabwe, and the economies were severely affected, with a significant decline in GDP, increased unemployment, and poverty. Moreover, the lack of basic goods, including food and medicine, led to a major humanitarian crisis in Venezuela.

On the other hand, Zimbabwe experienced hyperinflation in 2008, reaching a record level of over 156.96%. This crisis led to a significant decline in GDP and an increase in unemployment and poverty, as well as a major humanitarian crisis.

Figure 2 shows the main causes of inflation in Venezuela and Zimbabwe.

Figure 2. The main causes of inflation in Venezuela and Zimbabwe



3.1 Monetary and Fiscal Policies

Monetary and fiscal policies played a significant role in the causes of inflation in both Venezuela and Zimbabwe.

In Venezuela, the government's monetary policies included excessive money issuance and an overvalued exchange rate. These policies created inflationary pressures by flooding the market with currency and undermining the value of the national currency. Additionally, the government's decision to fix prices on essential goods, such as food, created supply shortages and further fueled inflation.

Similarly, in Zimbabwe, the government's monetary policy involved excessive money printing, which contributed to hyperinflation. However, the government's actions went beyond monetary measures and included land confiscation and nationalization of key industries. These drastic measures disrupted agricultural and industrial production, resulting in a decline in productivity and exacerbating inflationary pressures.

The combination of loose monetary policies, overvalued exchange rates, price controls, and disruptive government interventions in both countries contributed significantly to the inflationary crises they faced. These policy choices disrupted market mechanisms, created imbalances in supply and demand, and eroded confidence in the economy. Addressing the underlying issues of these policies and implementing prudent and transparent monetary and fiscal measures is crucial in combating inflation and restoring stability in both Venezuela and Zimbabwe.

3.2 Internal and External Factors

In both Venezuela and Zimbabwe, a combination of internal and external factors contributed to the causes of inflation.

In Venezuela, the heavy reliance on oil as the primary source of income made the country highly vulnerable to fluctuations in global oil prices. When oil prices declined, it impacted the government's revenue and its ability to manage the economy effectively. Additionally, the implementation of income redistribution policies, aimed at reducing social inequality, led to increased government spending and further inflationary pressures.

Similarly, in Zimbabwe, the political and economic crisis in the 2000s had a detrimental impact on the country's economy. The decline in foreign investment and the subsequent decrease in agricultural and industrial production disrupted the supply chains and contributed to inflationary pressures. Despite these challenges, the government continued to issue money and implement income redistribution policies, which further fueled inflation.

Both countries experienced a combination of internal mismanagement, economic imbalances, and external shocks that played a role in the causes of inflation. Addressing these factors, including diversifying the economy, attracting investment, implementing effective fiscal policies, and promoting stable governance, is crucial in mitigating inflationary pressures and restoring economic stability.

3.3 Other Factors

In both Venezuela and Zimbabwe, corruption, political crises, and uncertainty were significant contributors to the causes of inflation. In Venezuela, the government's implementation of unproductive economic policies, characterized by mismanagement and corruption, severely undermined the economy. Rampant corruption eroded public trust, hindered economic growth, and deterred foreign investment, exacerbating inflationary pressures.

Similarly, in Zimbabwe, the political crisis and associated instability had profound effects on the economy. The lack of effective governance, coupled with widespread corruption, led to economic mismanagement and a decline in investor confidence. Corruption siphoned off resources that could have been directed towards productive sectors, undermining economic growth and fueling inflation.

The presence of corruption and political crises not only directly impacted the economies of both countries but also created an environment of uncertainty and mistrust. This uncertainty, combined with a lack of confidence in the government's ability to address economic challenges, further heightened inflationary pressures. Addressing corruption, promoting political stability, and establishing transparent governance systems are crucial steps towards restoring confidence and implementing effective policies to combat inflation.

4. THE EFFECTS OF INFLATION IN VENEZUELA AND ZIMBABWE

4.1 Decreased Purchasing Power and Increased Poverty

One of the most evident effects of inflation is the decrease in purchasing power for the population. Even with higher wages or larger pensions, people have been unable to afford the same levels of consumption as before inflation. This has led to a reduction in the quality of life and an increase in poverty.

In Venezuela, inflation has led to rising prices of food and other essential goods, as well as a decline in wages and pensions. As a result, a significant portion of the population has fallen into poverty and struggles to meet their daily needs. In Venezuela, for example, prices increased by over 255.29% in 2019, leading to a significant decline in the living standards of the population. Residents of Venezuela have faced expensive and inaccessible food and medicine, resulting in an unprecedented humanitarian crisis in the country.

In Zimbabwe, hyperinflation has resulted in a drastic decrease in the purchasing power of the local currency, and the population has resorted to using alternative currencies such as the US dollar or the South African rand. At the same time, the government introduced price controls, leading to a decline in production and a scarcity of products in the market.

In conclusion, the effects of inflation in both Venezuela and Zimbabwe have been detrimental to the well-being of the population. The decrease in purchasing power has made it increasingly difficult for people to afford basic necessities, leading to a decline in their quality of life and a rise in poverty levels.

In Venezuela, the rapid inflation has caused a sharp increase in prices for essential goods, making them unaffordable for many. Wages and pensions have failed to keep up with inflation, further exacerbating the financial struggles of the population. This has resulted in a significant portion of the population falling into poverty and facing difficulties in meeting their daily needs. The inflationary crisis in Venezuela has also led to a severe shortage of food and medicine, creating a humanitarian crisis of unprecedented proportions.

In Zimbabwe, hyperinflation has severely eroded the purchasing power of the local currency, forcing people to resort to alternative currencies to conduct transactions. The government's implementation of price controls has further complicated the situation, leading to a decline in production and scarcity of products in the market. The reliance on foreign currencies and the instability caused by hyperinflation have hindered economic growth and negatively impacted the livelihoods of Zimbabwean citizens.

The devastating effects of inflation on the population highlight the urgent need for effective measures to curb inflation and stabilize the economies of both countries. It requires comprehensive policy interventions that address monetary, fiscal, and structural issues. By implementing sound economic policies, governments can aim to restore confidence, control inflation, and improve the overall economic and social conditions for their citizens. Additionally, international cooperation and assistance may play a crucial role in supporting these countries in overcoming the challenges posed by inflation and rebuilding their economies.

4.2 Increased Unemployment and Financial Instability

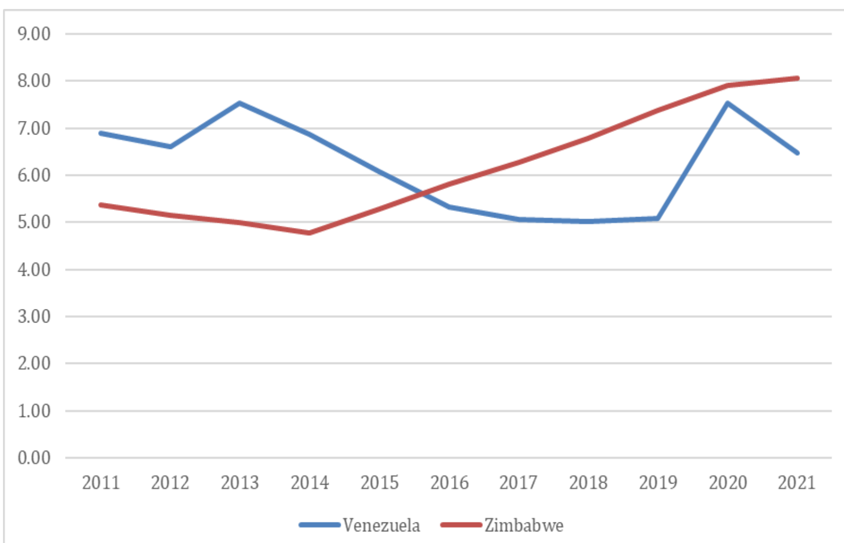
Inflation can also have a negative impact on the labor market and the financial sector. Inflation has led to increased production costs and reduced company profits, resulting in business closures or downsizing. This has resulted in a loss of investor confidence, currency devaluation, and increased public and private debt. Moreover, high inflation can lead to an increase in government debt and budget deficits, which can significantly deteriorate the state's financial situation.

In Venezuela, the economic crisis has led to a rise in unemployment and a decline in foreign investments. Additionally, the banking sector has been affected by inflation, leading to a loss of confidence in the financial system.

In Zimbabwe, hyperinflation has resulted in severe financial instability, and the banking system has become dysfunctional. The government introduced foreign exchange controls and issued banknotes of very high values, leading to a loss of confidence in the local currency and increased use of alternative currencies. Unemployment rates reached 90% in some areas.

In Figure 3 shows the evolution of the unemployment rate, for the two countries in the period 2011-2021.

Figure 3. The evolution of the unemployment rate, for the two countries in the period 2011-2021



Analyzing the data on unemployment rates in the period 2011-2021 for Venezuela and Zimbabwe reveals different trends between the two countries.

In the case of Venezuela, the unemployment rate remained relatively stable during this period, fluctuating around 5% - 7%. This indicates some labour market stability in the early stages of the analyzed period. However, in recent years, the unemployment rate has slightly increased, reaching a level of around 6.5% in 2021. This can be attributed, at least in part, to the economic and political instability in the country, which has affected the labour market and generated uncertainties regarding employment opportunities.

In the case of Zimbabwe, the unemployment rate experienced a gradual increase in the analyzed period. From relatively low levels in 2011 and 2012, the unemployment rate steadily rose, reaching approximately 8% in 2021. This trend can be explained, in part, by the impact of the political and economic crisis in the country, which has led to the deterioration of the business environment and reduced investor interest. This has created difficulties in creating new jobs and contributed to the rise in unemployment.

Overall, the data suggest that both Venezuela and Zimbabwe face significant challenges regarding the labour market. Venezuela had relative stability in the early stages but experienced a slight increase in unemployment in recent years. Meanwhile, Zimbabwe has faced a consistent rise in the unemployment rate, reflecting the economic and political difficulties the country is facing. Addressing these challenges requires appropriate policies and measures, such as promoting economic growth, improving the business environment, and investing in education and vocational training, to stimulate job creation and reduce unemployment in both countries.

4.3 Social Impact

Inflation can have a significant impact on society as well.

In Venezuela, the decreased purchasing power and increased poverty have led to a rise in crime and a decline in the quality of life. Additionally, inflation has had a negative impact on the healthcare and education systems.

In Zimbabwe, hyperinflation has resulted in increased poverty and social instability. The government has confiscated agricultural land and nationalized companies.

In addition to the aforementioned effects, inflation can have other negative consequences on society, including:

- Increased social inequality and political instability;
- Reduced investments in infrastructure and other public projects;
- Decline in exports and international economic competitiveness.

In summary, the repercussions of inflation extend beyond the economy and profoundly affect society. In Venezuela and Zimbabwe, inflation has resulted in decreased purchasing power, increased poverty, and social instability. Crime rates have risen, and the quality of life has declined in Venezuela, while Zimbabwe has faced land confiscation and nationalization of companies. Additionally, inflation exacerbates social inequality, political instability, hinders investments in infrastructure, and reduces international economic competitiveness. It is imperative to implement effective measures to mitigate inflation's societal impact, including sound economic policies, political stability, and social welfare initiatives, to foster sustainable development and enhance societal well-being.

5. GOVERNMENT INVOLVEMENT IN COMBATING INFLATION

Inflation is an economic issue that requires careful and coordinated approach from governments. Generally, governments can take measures to slow down or even halt inflation through monetary and fiscal policies. However, the success of these policies depends on various factors such as the level of inflation, available economic resources, and the economic and political characteristics of the country in question.

5.1 Monetary Policies

Monetary policy is a way for the government to control the money supply and interest rates to slow down or reduce inflation. Traditionally, a tighter monetary policy with an increase in interest rates can help reduce inflation by curbing the demand for goods and services and hence, prices.

In Venezuela, the Central Bank attempted to control inflation through tight monetary policies. This included raising interest rates and controlling credit. However, these efforts were countered by the government's fiscal policy and the increase in budget deficit, which continued to fuel inflation.

In Zimbabwe, the government adopted a deflationary monetary policy by introducing the Zimbabwean dollar in 2009. This led to a significant decline in inflation, but structural economic issues and corruption continue to pose challenges in stopping inflation.

5.2 Fiscal Policies

Fiscal policy plays a critical role in managing inflation by influencing the overall level of demand in the economy.

In the case of Venezuela, the government pursued an expansionary fiscal policy characterized by high levels of public spending and budget deficits. This approach, coupled with the country's heavy reliance on oil revenues, contributed to the rapid increase in money supply and inflation rates. To address inflation effectively, the government could consider adopting a tighter fiscal policy, which would involve reducing government spending and increasing taxes. By doing so, the government can reduce the demand for goods and services, helping to mitigate inflationary pressures.

In Zimbabwe, the government implemented measures to reduce spending and increase taxes as part of its efforts to combat inflation. These fiscal tightening measures aimed to control the money supply and stabilize prices. However, it's important to note that fiscal policy alone may not be sufficient to address the structural economic issues that contribute to inflation in Zimbabwe. The country faces challenges such as limited productivity, low investor confidence, and currency instability, which require comprehensive and coordinated reforms across various sectors of the economy.

In both Venezuela and Zimbabwe, while fiscal policy adjustments can play a significant role in managing inflation, a comprehensive approach that addresses underlying structural issues is necessary. This includes implementing sound monetary policies, promoting economic diversification, improving governance and transparency, attracting foreign investment, and enhancing productivity and competitiveness. By addressing these broader economic challenges, policymakers can create a more stable and sustainable environment that contributes to long-term price stability and economic growth.

5.3 Fiscal Measures

In addition to monetary measures, governments can also take fiscal measures to combat inflation. These include increasing taxes and reducing public spending.

In the case of Venezuela, the government increased taxes and introduced new taxes to generate more revenue for the state budget and reduce the fiscal deficit. Additionally, the government reduced public spending by cutting fuel and food subsidies, as well as reducing the number of public sector employees. However, these measures were insufficient to reduce inflation, which continued to rise.

In Zimbabwe, the government implemented similar fiscal measures such as tax increases and reductions in public spending. The government also attempted to reduce the budget deficit through asset sales and external borrowing. However, these measures had a limited impact on inflation, which continued to rise due to other factors such as expansive monetary policy and political instability.

Overall, fiscal measures can be useful in combination with monetary measures to reduce inflation. However, these measures can be unpopular and may have negative effects on the economy and society as a whole. Therefore, it is important for governments to consider all available options and find a balance between reducing inflation and maintaining economic and social stability.

6. CONCLUSION

Inflation is a complex issue that requires careful and coordinated efforts from governments. Monetary and fiscal policies can be employed in the fight against inflation, but their success depends on several factors, such as the level of inflation, available economic resources, and the specific economic and political characteristics of each country.

In the case of Venezuela, the Central Bank attempted to control inflation through a tight monetary policy, which included raising interest rates and credit control. However, these efforts were counteracted by the government's expansionary fiscal policy, resulting in high public spending and budget deficits, fueling inflation.

In Zimbabwe, the government implemented a deflationary monetary policy by adopting the Zimbabwean dollar in 2009, which led to a significant decline in inflation. However, structural issues in the economy and corruption continued to pose challenges in managing inflation.

Regarding fiscal policies, both countries took measures to reduce inflation by increasing taxes and reducing public spending. However, inflation continued to rise due to other factors, such as expansive monetary policy and political instability.

The experiences of Venezuela and Zimbabwe in dealing with inflation provide some valuable lessons. Firstly, it emphasizes the importance of well-managed monetary policy. Venezuela attempted to control inflation through a tight monetary policy, but these efforts were counteracted by expansionary fiscal policies and increasing budget deficits. In contrast, Zimbabwe succeeded in significantly reducing inflation by adopting the Zimbabwean dollar, leading to a significant decline in inflation. This example highlights the necessity of coherent and aligned monetary and fiscal policies to control inflation.

A more detailed analysis of the underlying factors contributing to the inflation rates in Venezuela and Zimbabwe is highly recommended. This thorough investigation should focus on specific sectors of the economy that have been most affected, including manufacturing, agriculture, or services. The analysis should examine the impact of government policies, market dynamics, and external influences on employment opportunities within these sectors. By understanding these factors in greater depth, policymakers and stakeholders can gain valuable insights to formulate effective strategies for addressing inflation and promoting economic stability.

Furthermore, it is important to delve into the fiscal and monetary policies implemented by the governments of Venezuela and Zimbabwe, as these policies play a crucial role in shaping inflationary pressures. The analysis should assess the effectiveness of measures such as price controls, subsidies, currency exchange policies, and central bank actions in managing inflation. Additionally, external factors such as international trade, foreign investment, and economic sanctions should be examined to understand their influence on inflation rates.

A comprehensive study should also investigate the social and demographic factors that contribute to inflation, such as population growth, income inequality, and access to essential goods and services. Understanding the interplay between these factors and inflation can provide a holistic view of the challenges faced by these economies.

By conducting a thorough analysis, policymakers and stakeholders can gain a deeper understanding of the root causes of inflation in Venezuela and Zimbabwe. This knowledge can then guide the development of targeted policies and interventions aimed at stabilizing prices, promoting sustainable economic growth, and improving the overall well-being of the population.

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TOWARDS A SUSTAINABLE ECONOMY WITH ARTIFICIAL INTELLIGENCE: SCIENTIFIC RESEARCH PERSPECTIVES AND POSSIBLE DIRECTIONS OF REAL SYNERGY

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Abstract:
Without any doubt, given recent advancements in the field, Artificial intelligence (AI) has the potential to revolutionize the way we approach sustainable economic development. By enabling the processing and analysis of large and complex data sets, AI can support identifying patterns, predicting trends, and optimizing resource use, while leading to more efficient and sustainable business practices. Additionally, AI can play a crucial role in promoting social and environmental equity, by sustaining the transition to circular and regenerative economy models.
However, understanding the potential impact of the AI adoption towards sustainable economy initiatives, firstly requires identifying the main perspectives on the relationship between AI and economy, in general. Therefore, the current article provides an overview of the current state of research on the considered topic, being based on a bibliometric analysis of the scientific literature on the association between AI and sustainable economy, using papers from the Web of Science database. Moreover, the paper highlights key potential directions of AI usage in order to advance sustainable development goals and support the transition to a more regenerative and equitable economy.

1. INTRODUCTION

In the general sense, the sustainable economy is understood as an economic approach that aims to meet the present needs of society without compromising the ability of future generations to meet their own needs. This involves using natural resources responsibly and efficiently, protecting the environment and promoting sustainable economic development. Artificial intelligence, also called a *game-changer* (Pratt, 2022) can help achieve goals by optimizing processes and reducing environmental impact. According to a report by the World Economic Forum, AI refers to computer systems that *can sense their environment, think, learn, and act in response to what they sense and their programmed objectives* (WORLD ECONOMIC FORUM, 2018).

On the one hand, the relevance of the research topic in the current context is based on the informational and technological explosion associated with the development of artificial intelligence, which captures many fields of interest with an astonishing speed. On the other hand, according to the fundamental law of economics - limited resources and unlimited needs - one feels the imperative of an approach to the problem in today's reality, when, against the background of a consumerist society, more and more is consumed, while only a part of the resources has the quality of being renewable. The need for a balance is thus imposed, taking into account the fact that, in order to allow sustainable development, the rapid development of AI must be supported by express regulations and a complete informational background (Ricardo, et al., 2020). However, the connection between AI and the sustainable economy seems to be much more complex, so *Sustainable AI = Sustainability of AI + AI for sustainability* (Wynsberghe, 2021), and the wheel does not need to be reinvented, so effective AI models should be available to all actors (Lernende Systeme, 2022).

Currently, there is an increased interest in the implementation of AI solutions in various areas of life, to facilitate processes that are susceptible to optimization. The fact that artificial intelligence has enormous potential in achieving the goals of the sustainable economy cannot be disputed, but this potential cannot be achieved unless the connections and nodes between the sustainable economy approaches related to artificial intelligence are appropriately studied.

That is precisely why we set out to study this aspect of multidimensional relationships in the specialized literature. Thus, the fundamental purpose of the present study is to identify the links between artificial intelligence and the sustainable economy, by capitalizing and evaluating the literature from 1945 onwards. This goal was achieved through the following specific objectives:

- Evaluation of the interdisciplinarity relationship associated with publications that analyze the phenomenon;
- Structural analysis of publication categories by document types;
- Measuring the dynamic evolution of specialized literature on the given topic;
- Evaluation of research interest at a global level, by countries and regions of the world, in the field of AI correlated with the sustainable economy;
- Characterization of the concentration of publications on countries through the Hirschman-Herfindhal, Gini Corado and Strűck models;
- Researching the perspectives and feasible directions of implementation of AI in sustainable economy approaches;
- Preliminary SWOT analysis of the relationship between AI and the sustainable economy as a concept.

2. DATA AND METHODS

The research assumed, from a methodological perspective, performing a bibliometric analysis regarding the analyzed phenomenon. Then, based on this, the potential directions for implementing AI solutions in the sustainable economy were highlighted and the opportunities, challenges, strengths and weaknesses of such an action mechanism were described.

To carry out the bibliometric analysis, one of the most popular and reliable databases was used - Web of Science. Using the advanced search options, the following Boolean search query was first entered: **TS=("artificial intelligence") AND TS= ("sustainable economy")**. A total of 8 search results were generated, therefore, to increase the number of results, we expanded the search query to the following form: **TS=("artificial intelligence") AND TS= ("sustainable" OR "sustainability") AND TS=("economy")**. Thus, a number of 389 results were generated. The terms included in the query were selected according to their perceived level of relevance in researching the topic. The TS field allowed searching for the terms included in the query in the following fields of each record: title, abstract and keywords.

To achieve more comprehensive research, the longest time period available in the Web of Science database was set: 1945-2022. Subsequently, the raw data from the database were processed with the help of the methods tool provided by the VoSviewer software, which selected keywords based on the number of their occurrences in the specified fields of each record.

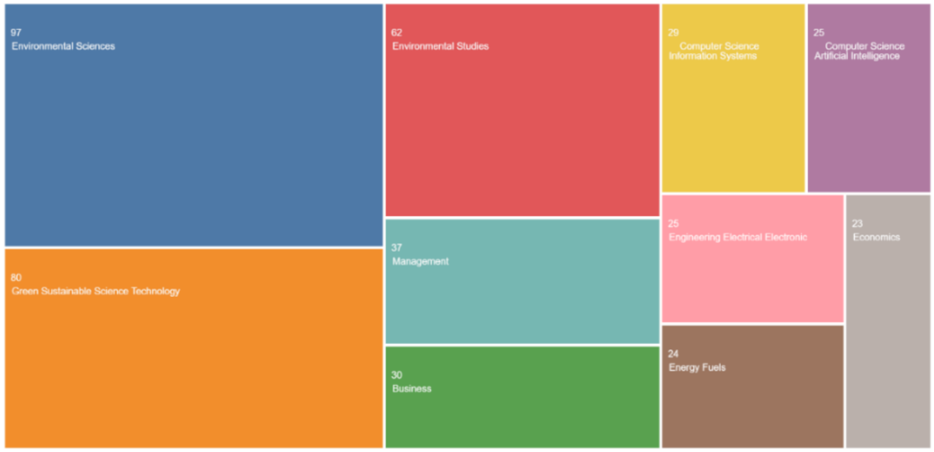
3. PERSPECTIVES OF SCIENTIFIC RESEARCH ON THE ADDRESSED PHENOMENON

As mentioned, in the first phase, the preliminary results obtained from the query registered in the Web of Science were analyzed, based on which notable results were found regarding the specialized literature in the field of AI and the sustainable economy.

3.1 Web of Science Raw Results Analysis

As a result of the query created in the Web of Science database, a total number of 389 publications were selected, which underlines the intensity of the existing link between artificial intelligence on the one hand and sustainable economy on the other, in the specialized literature. According to the obtained results, the publications are associated with several fields of interest, which outlines the impact of the research theme in several areas. For better understanding, Figure 1 presents the top 10 areas of interest as follows: *Environmental Sciences* (97), *Green Sustainable Science Technology* (80), *Environmental Studies* (62), *Management* (37), *Business* (30) and other. Overall, the figure underlines the idea of interdisciplinarity that exists between the fields related to AI and the sustainable economy.

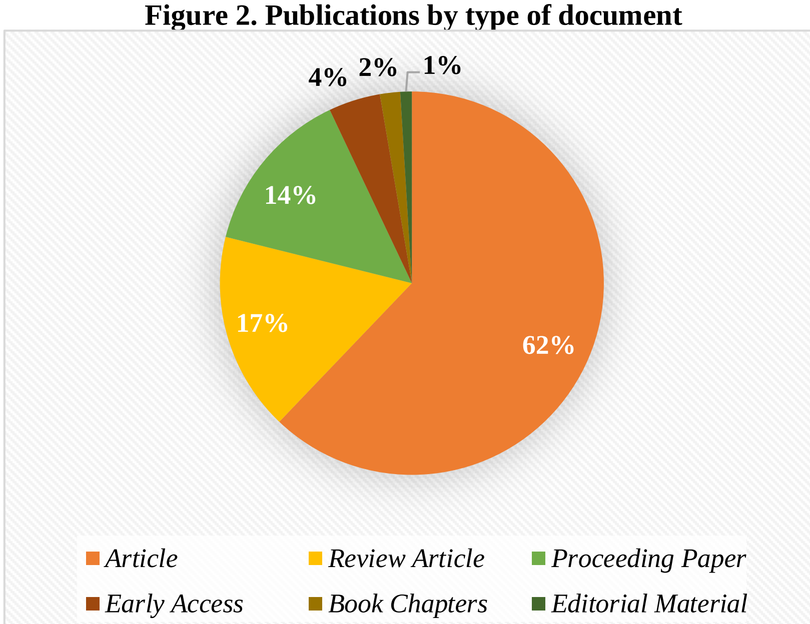
Figure 1. Areas of interest associated with publications analyzing the phenomenon



Source: Web of Science - General results obtained after running the query

Another important aspect to take into account is related to the structure of the published documents. For a complete understanding, Figure 2 shows the distribution of publications by document category. Thus, it is noted that the largest share of the total publications of 62% is owned by articles. The second highest share (17%) belongs to review articles, and the next highest share (14%) is associated with proceeding paper. What seems notable to mention in this structural arrangement is that 2% of the total publications belong to book chapters. From our point of view, this fact confirms the topicality of the subject and, at the same time, can be an indicator of the fact that the interest in the sustainable economy in association with artificial intelligence is a growing one and constitutes a real subject of research in the academic sphere.

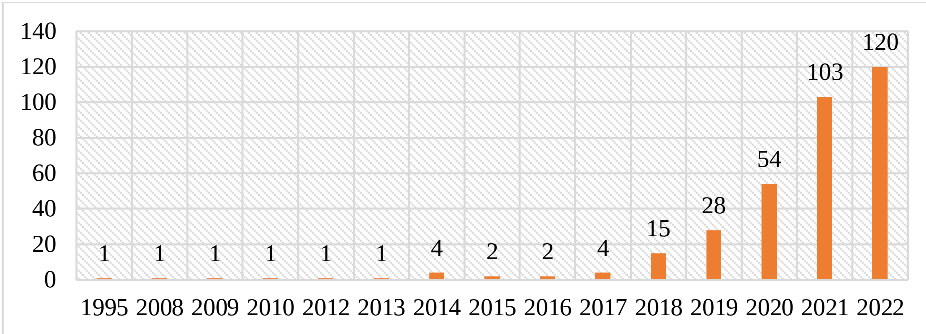
Figure 2. Publications by type of document



Source: Web of Science - General results obtained after running the query

As expected, the number of publications on the analyzed phenomenon registered a continuous and visible increase. Figure 3 shows the evolution of written publications from 1995 to 2022, which is also the longest time span available in the Web of Science database.

Figure 3. Evolution in the dynamics of publications

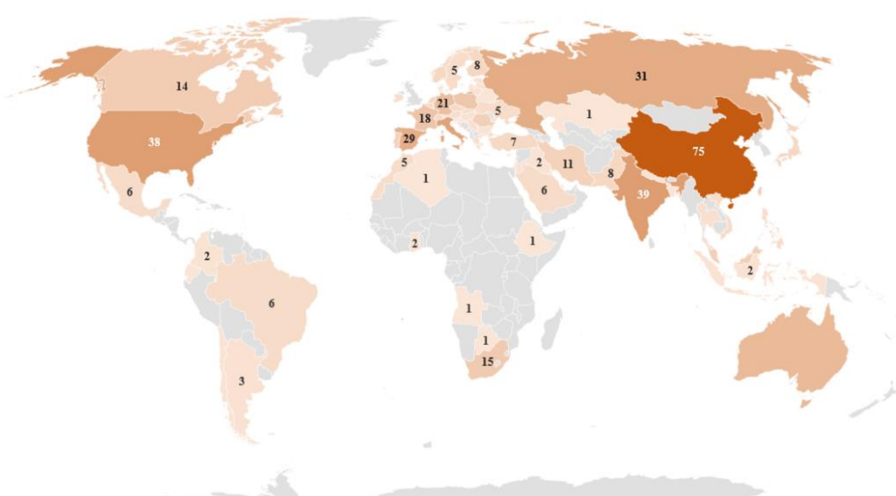


Source: Web of Science - *General results obtained after running the query*

It emphasizes that starting from 2018, the number of publications associated with the relationship between AI and the sustainable economy or the sustainability of the economy is growing at a noticeably faster pace, so that from 15 publications in 2018 to 120 publications in 2022, their number increasing 8 times in 4 years. This fact demonstrates the increased research interest in the implications of AI in the sustainable economy and, at the same time, it can be an indicator of how the implementation of solutions generated by AI in the sphere of the sustainable economy can be useful and necessary to capitalize.

In order to have an exhaustive picture of the publications associated with the research theme in different countries, we constructed a cartogram of the publications, represented by figure 4. The areas colored in darker brown are indicators of increased research interest, which is attested in China (75 publications), India (39), USA (38), Italy (36) and Great Britain (33), this being the top of the countries with the highest number of publications on the subject of study. The distribution of research interest is mainly present in more developed countries, where the existing technical-scientific progress can form the foundation for future research in the field of AI for a more sustainable economy.

Figure 4. Geographical distribution of research interest



Source: Web of Science - *General results obtained after running the query*

To characterize the concentration of publications on countries, we propose to use the Hirschman-Herfindhal, the Gini Corado and the Strűck models. This aspect is important, because it reveals how the research interest is globally uniform.

The Hirschman-Herfindhal model, with values between ($\frac{1}{n}$, 1):

$$K_H = \sum_{i=1}^{n}(p_i^2) \quad (1)$$

The Gini Corado model, with values between ($\frac{1}{\sqrt{n}}$, 1):

$$K_G = \sqrt{\sum_{i=1}^{n}(p_i^2)} \quad (2)$$

The Strűck model, with values between (0, 1):

$$K_S = \sqrt{\frac{n\sum_{i=1}^{n}(p_i^2)-1}{n-1}} \quad (3)$$

where p_i is the weight held by each of the *n* elements.

The obtained results were summarized in table 1.

Table 1. Analysis of the degree of concentration of publications by country

Coefficient	Value	Range of variation		Approaching the x limit
K_H	0,04	0,01	1,00	lower
K_G	0,20	0,11	1,00	lower
K_S	0,02	0,00	1,00	lower

Source: Created by the author

The analysis of the results in the table allows us to notice that all three models used for the analysis of the degree of concentration of publications by country denote a low degree of concentration of publications by country, because the value of the coefficients is closer to the lower limit.

3.2 Exploring the Landscape of Research on Key Terms: A Bibliometric Analysis of Published Literature

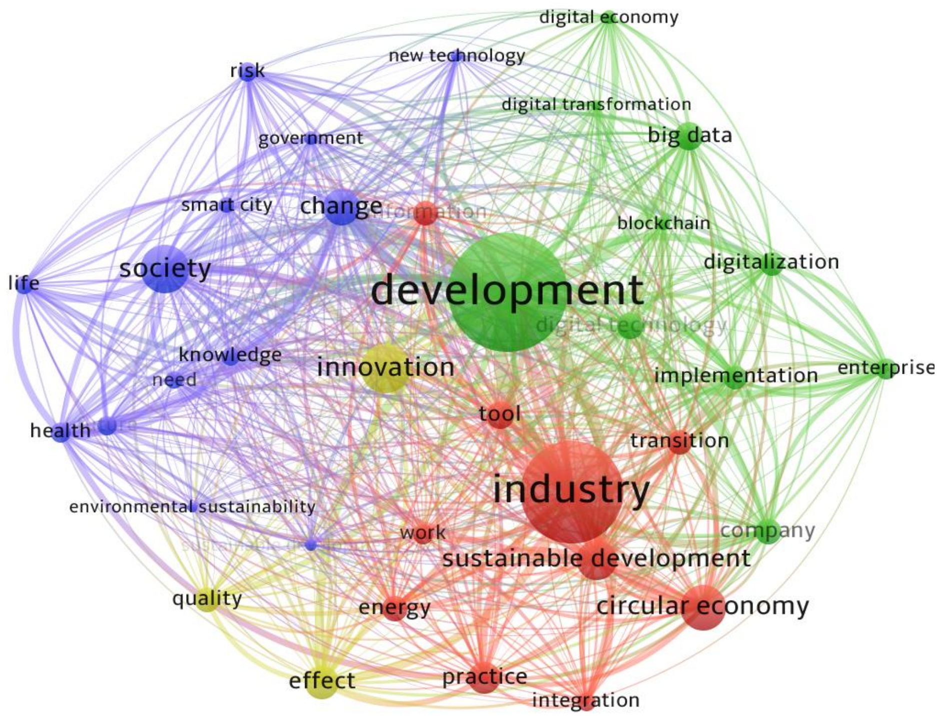
After processing the data through the VoSviewer software, a keyword map was generated (Figure 5). The nodes represented, consisting of words included in the analysis, are larger the greater the shoulder of occurrences of the keywords in the title, abstract and keywords. Thus, from a total of 11170 terms, 94 terms were selected, according to a minimum number of occurrences of 30 times per record. However, based on the predefined relevance score of 60%, 56 terms resulted. Of these, 36 were included in the occurrence map, after manual exclusion of terms considered irrelevant, such as prepositions, proper names, general common nouns, which deviated from the purpose of the analysis.

According to the occurrence map, a top of the most frequent words (with the associated number of occurrences) is as follows: *development* (354), *industry* (308), *innovation* (156), *society* (153), *circular economy* (141), *sustainable development* (130), *effect* (119), *change* (113), *practice* (112), *big data* (93).

The terms "society" and "change" could reflect the fact that with the consumption of existing economic resources to meet society's needs, a change is needed to restore balance, and this change could be AI, while the terms "development" and "big data" could indicate the importance of collecting a large volume of data for the creation and development of algorithms on which artificial intelligence is based.

Also, the terms "industry", "circular economy", "sustainable development" and "practice" could emphasize the importance of a sustainable development of the economy in any industrial practice, through the reuse of resources and the implementation of good practices, and the terms "innovation" and "effect" emphasizes the idea of causality existing between the introduction of the achievements generated by the innovation.

Figure 5. Keywords Co-occurrence Map



Source: VoSviewer – obtained after processing the data from Web of Science

At the same time, it is possible to analyze keywords by clusters to identify links between keywords, according to the four colors highlighted in the occurrence map, as follows:

- cluster 1 – purple (17 items);
- cluster 2 – green (10 items);
- cluster 3 – red (10 items);
- cluster 4 – yellow (3 items).

This research direction will be addressed in a future study.

4. AI-POWERED SUSTAINABLE ECONOMY – KEY POTENTIAL DIRECTIONS

Artificial Intelligence (AI) is undoubtedly expected to transform the way we live, work, and interact with the world around us. As has been observed, in recent years, the idea of *sustainability* became *a popular catchphrase in contemporary development discourse* (Mensah, 2019) and has gained significant attention, and there is growing recognition of the need to integrate it into every aspect of our lives, including our economic systems. On the other hand, we assumed that AI has the potential to play a crucial role in enabling the transition to a sustainable economy. Therefore, it is important to explore the possible key directions for AI use in achieving a sustainable economy, and to discuss how AI can help address related dimensions of sustainability.

According to the European Commission, to achieve a truly sustainable economy, it is necessary to simultaneously address the three interlinked and equal dimensions of economic, social, and environmental sustainability (European Commission, 2019). Considering the previously mentioned statement, some of the promising directions for AI usage as a contributor for the sustainable economy, could be summarized, for each dimension, as following:

- *Economic sustainability*:
  - Optimization of resource allocation: AI algorithms can help optimize the use of resources, such as energy, raw materials, and labor, in various economic sectors, including manufacturing, transportation, and construction. This optimization can lead to reduced waste, increased efficiency, and cost savings.
  - Prediction and prevention of financial crises: AI can help identify early warning signs of potential financial crises, such as market fluctuations or increasing debt levels, and provide policymakers with actionable insights to prevent or mitigate them. For instance, AI algorithms can detect patterns and trends in stock prices, interest rates, and trading volumes to identify market fluctuations that may indicate an impending crisis. Additionally, AI can analyze data related to borrowing, lending, and debt levels to identify increasing risks in the financial system. By providing policymakers with real-time insights and analysis, AI can enable them to make more informed decisions and take timely actions to prevent or mitigate a financial crisis. For example, policymakers can use AI-generated scenarios to stress-test the financial system and develop appropriate policies and regulations to prevent systemic risks. By leveraging the power of AI, policymakers can take a proactive approach to managing financial stability and ensuring economic sustainability.
  - Development of sustainable business models: AI can help businesses develop sustainable business models that take into account the social and environmental impacts of their operations, as well as their financial performance. Specifically, by using AI technologies, businesses can analyze large amounts of data from various sources, such as supply chain, customer feedback, and environmental monitoring systems, to identify the social and environmental impacts of their operations, gaining insights into their sustainability performance and identifying areas for improvement.

- *Social sustainability*:
  - Enhancing access to education and healthcare: AI can be used to develop personalized learning and healthcare systems that adapt to the needs and abilities of individual learners and patients, thereby enhancing their access to these services.
  - Promoting social equality and inclusion: AI can help identify and address biases and discrimination in various social systems, such as hiring processes or criminal justice, and promote more equitable outcomes. For example, AI algorithms can analyze hiring data to identify any patterns of bias in the hiring process, such as gender or racial bias. Similarly, AI can analyze data from criminal justice systems to identify any patterns of bias in the application of the law, such as racial or socioeconomic bias.
  - Supporting disaster response and humanitarian aid: AI can assist in disaster response and humanitarian aid efforts by analyzing and interpreting data, providing real-time situational awareness, and identifying areas of need.

- *Environmental sustainability*:
  - Monitoring and prediction of environmental changes: AI can analyze and interpret vast amounts of data from various sources, such as satellites, sensors, and social media, to monitor environmental changes, such as climate change or deforestation, and provide early warning of potential environmental disasters.
  - Optimization of resource management: AI can help optimize the use of natural resources, such as water, land, and forests, by providing real-time insights into their availability, quality, and usage patterns. In India, for example, in 2018 AI helped farmers increase peanut production by 30% (Cho, 2018).
  - Development of sustainable energy systems: AI can help develop and optimize sustainable energy systems, such as wind or solar power, by analyzing weather data, predicting energy demand, and optimizing energy storage and distribution.

It is predicted that the use of AI in environmental applications could contribute up to $5.2 trillion to the global economy in 2030, a 4.4% increase over business as usual (PwC UK, 2023). The previously mentioned directions represent just some examples of how AI can be used to address the three dimensions of sustainability concurrently. However, it is essential to keep in mind that AI is not a silver bullet (Chui, Chung, & Van Heteren, 2019) and must be used in conjunction with other policy and technological solutions to support the sustainable economy development and these three directions *cannot be pursued in isolation for sustainable development to flourish* (Mensah, 2019).

5. A PRELIMINARY SWOT ANALYSIS ON THE RELATIONSHIP BETWEEN AI AND THE SUSTAINABLE ECONOMY

The relationship between AI, also called the *new space race* (UNESCO, 2019), and the sustainable economy is, without questioning, a complex and evolving one. Some authors believe that AI has the potential to revolutionize the way we approach sustainability challenges (Rijmenam, 2023). While AI has the potential to contribute to sustainable development in various ways, some of them being already highlighted, there are also significant challenges and risks associated with its use. Under these circumstances, the SWOT analysis was chosen in order to highlight the main strengths, weaknesses, opportunities, and threats that may occur while the shift from the *traditional sustainable economy efforts* to the *smart AI-powered sustainable economy efforts* concludes in reality.

Comprehending that further analysis and research may be necessary to fully understand the phenomenon under analysis, the following considerations brought into discussion could be described as representing components of a preliminary SWOT analysis, as follows:

- **S**trengths:
  - Artificial Intelligence (AI) can help optimize resource utilization and reduce waste, making it a powerful tool for sustainable development.
  - AI can help identify new opportunities for sustainable growth, such as the development of renewable energy technologies and the creation of green jobs.
  - AI can enhance data analysis and decision-making processes, which can help organizations achieve sustainability goals.

- **W**eaknesses:
  - The development and deployment of AI requires significant investments, which may limit its adoption by smaller businesses and organizations.
  - The use of AI raises concerns about data privacy, security, and bias, which can hinder public trust and limit adoption.
  - AI technologies may not always align with sustainability goals, and there is a risk that AI could be used to automate unsustainable practices.

- **O**pportunities:
  - The integration of AI and sustainable practices can create new business models and economic opportunities.
  - AI can help address complex sustainability challenges by providing insights and enabling new approaches to problem-solving.
  - The use of AI can help accelerate progress towards achieving the United Nations' Sustainable Development Goals, provided that the development and implementation of AI encourages equality and inclusion for all participants (Ahmed, 2022).

- **T**hreats:
  - There is a risk that AI could exacerbate existing inequalities and have negative social and environmental impacts if not implemented with care. If the data used to train AI systems is biased or incomplete, it can perpetuate existing inequalities and lead to discriminatory outcomes. For example,

if an AI system is trained on data that is biased against a certain group of people, it may perpetuate that bias when making decisions about that group in the future.

- The use of AI in resource extraction, manufacturing, and other industries could lead to increased energy consumption and carbon emissions. Firstly, the use of AI requires significant computational power, which in turn requires a significant amount of energy. As the demand for AI applications grows, so does the demand for energy to power the computers and data centers that run these applications. Secondly, the increased efficiency and productivity *within the lab* (Cockburn, Henderson, & Stern, 2018) gains enabled by AI could lead to an increase in production and consumption, resulting in a corresponding increase in energy consumption and carbon emissions. For example, AI could be used to optimize production processes, reduce downtime, and improve yield, leading to increased output and energy consumption. Finally, the use of AI could also lead to the development of new products and services that require additional energy to produce and use. For example, the development of autonomous vehicles or smart homes could increase energy consumption and carbon emissions if they are powered by fossil fuels rather than renewable energy sources.
- The rapid development and deployment of AI technologies may outpace the development of policies and regulations to ensure ethical and sustainable use.

To overcome these risks, it is necessary for industries and governments to ensure *the safety, explainability, transparency and validity of AI application* (Cho, 2018). To conclude, it can be stated that the relationship between AI and the sustainable economy presents both opportunities and challenges. Despite these, the fact that by leveraging the strengths of AI and addressing its weaknesses and threats it is possible to develop innovative and sustainable solutions that benefit both society and the environment, cannot be questioned, with the mention of ensuring *transparency* (Bernard, 2023) and under the *umbrella of explicability* (Robins, 2019).

6. CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The result of this study aims to address the link between artificial intelligence and sustainability through the bibliometric analysis of specialized literature, as well as by identifying the directions, opportunities, risks and challenges associated with the implementation of AI in the economic circuit.

The present research allowed us to ascertain the following aspects:

- the relationship between artificial intelligence and the sustainable economy constitutes a current trend in the specialized literature, an increased interest well attested in 2018;
- the connection between two concepts is not of local importance, but a phenomenon of global scope, with a low degree of concentration, respectively with a relatively uniform distribution at the level of the analyzed countries;
- the relationship between artificial intelligence and sustainable economy can be considered a topic of scientific novelty in the literature;
- by capitalizing on the strengths of artificial intelligence, progress can be achieved in all three dimensions of sustainability.

As the main limitations of the research, we can mention the following:

- the study was carried out on a single database, therefore the results obtained do not have the claim to be generalized at the level of world literature, nor the requirement of absolute representativeness;
- the number of publications indexed in the database can be considered non-exhaustive, because it is attested to the probability that, although quality studies on the same topic still exist, they are not published in Web of Science or other databases due to certain conditions inhibitors independent of the will of the authors.

A potential future research direction aims to individually address each cluster related to the keyword occurrence map, as well as to extend the work area over several databases.

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CONSIDERATIONS ON THE EUROPEAN BUDGET. A STRATEGIC APPROACH AND IMPLICATION FOR ROMANIA

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Abstract:
The European budget was designed as an important tool to support EU member states and non-EU states by managing revenue and expenditure flows. Undoubtedly, the procedures for creating and adopting the budget represent acts of maximum responsibility, and the reasoning behind its creation can be characterized by solidarity, integration and added value. However, given the changes and contexts in which they must operate, they abound in complexity, and understanding them involves in-depth analysis. The present work aims to structurally and value explore the EU budget, by outlining the sources of revenues and expenses, by examining the allocation of resources in each member state, culminating with a case study for Romanian allocated funds, the results obtained providing a valuable perspective on the topic addressed. The current analysis is in the time frame 2021-2027. Methodologically, the present study combines the comprehensive analysis of external sources. Thus, the fundamental objectives established aim to form a complex and exhaustive image of the European budget, including country profiles, as well as to identify the degree of efficiency of budget execution in the Romanian area. Finally, the paper culminates with an approach to Romanian budget as an expression of European investments, highlighting the role of EU funds in the process of the country's modernization.

Keywords: Budget, Financial System, European Union, European Budget, Romanian EU Budget

1. INTRODUCTION

Contemporary events have shown us that flexibility, adaptability and resilience are key elements for survival. However, it is not just a question of survival, but the need for a decent standard of living, development - centered innovation and the preservation of the dignity of the human being is still felt. Hence the topicality of the research topic. The EU budget must be designed in a way that ensures respect for these values regardless of the existing regimes, be they political, economic or social.

We chose this research topic, because it is an area of interest, considering that it is a constantly changing reality. At the same time, we are interested in what the EU's financing plans are for Romania's budget and what are the directions of European interest in Romania.

The main purpose of this article is to highlight the role of the European budget in the prosperity of citizens through an approach that goes beyond statistics and numbers. This goal can be achieved through the following specific objectives:

- Obtaining an exhaustive picture of the structure and size of the European budget, including by approaching it by country and region;
- Identifying sources of funding and directions for spending European money as a means of mirroring the European financial mechanism and argument;
- Appreciation of European contributions at the level of Romania by identifying large-scale and impactful projects implemented with EU support.

The EU budget was designed not as a substitute, but as a complementary tool to the national budgets of the EU countries, having the main role of preventing duplication of efforts and coming into play when it is more efficient to spend financial means at the EU level than at the local level, regional or national (Benefits of the EU budget). The size, structure, planning, formation and execution of the budget are topics of continuous interest at the European level, which bring individual implications at the level of companies, beneficiaries and consumers of resources. In essence, all the procedures related to them, which can sometimes seem bogged down in bureaucracy, have no other purpose than to bring added value to European citizens through a safe and consistent increase in their level and standards of living. In this sense, an investigation by the European Commission carried out at the level of several European leaders highlighted the quintessence of the actions carried out around the budget. Thus, opinion leaders in the EU answered the question: "What does the EU budget bring to citizens?". The answers given by them were summarized in table 1.

Table 1. European leaders' views on the value of the European budget delivered to citizens

EUROPEAN LEADERS (2021)	ADDED VALUE
Johannes Hahn ***European Commissioner for Budget and Administration***	Better lives.
Nadia Calviño ***Vice-President, Minister for Economy and Digitalisation, Spain***	The EU budget is at the heart of the European project. It has brought citizens shared prosperity and also built the European welfare state.
Johan Van Overtveldt ***Member of the European Parliament***	It should bring added value.
Lourdes Acedo Montoya ***European Commission***	It brings added value of belonging to the European project.
Philippe Lamberts ***Member of the European Parliament***	More integration, less competition between Member States and a stronger voice in world affairs.
Cinzia Alcidi ***CEPS Director of Research***	Opportunity and improvement in standards of life.
Gert jan Koopman ***European Commission***	Stability, reassurance and opportunity.
Rebecca Christie ***Bruegel Fellow***	It offers the EU a chance to fund something jointly and across borders.
Clara de la Torre ***European Commission***	More sustainable future for the coming generations and opportunities for the growth of citizens as professionals.
Andreas Schwarz ***European Commission***	Prosperity, security and solidarity.
Diana Ürge-Vorsatz ***IPCC***	Equality, justice and increase of well-being.
Ursula von der Leyen ***2020 European Commission President***	This is a budget for a Union that serves us all.

Source: Author's processing, using data from The European Commission (Benefits of the EU budget), accessed 14.04.2023

Although the reflected contents are expressed differently, they have a common key – the idea of an ever-growing prosperity, which takes on different manifestations: stability, integration, opportunities, sustainability, justice, equity and solidarity. According to the European Commission (Benefits of the EU budget), the EU budget promises to maintain and even strengthen its role as a global actor and to remain, together with its member states, the main donor of humanitarian aid and development worldwide.

2. THE EUROPEAN UNION BUDGET

There are many definitions of EU budget that contain elements like: decisions, instrument, objectives, revenues, expenditures. According to Iozzo, A. et al., the European budget is *the result of decisions taken decades ago and subsequent adjustments decided under the pressure of external events or for political reasons* (Iozzo, Micossi, & Salvemini, 2008). Laffan, B and the other authors believe that the budget *is a focal point for repeated negotiations between the member states and the institutions of the European Union* (Laffan & Lindner, 2010), while Popa, I. et al. defines the EU budget as *an important instrument that contributes to the achievement of the stated objectives of the European Union* (Popa, Parpandel, & Codreanu, 2012). Arthuis, J. described budget as *budget as the uncompromising mirror of any exercise of power* (Arthuis, 2017). Regulation (EU, Euratom) 2018/1046 outlines the budget as *an instrument that provides for and authorizes all revenues and expenditures considered necessary for the European Union*.

Another definition describes the European Union budget as t*he act authorizing the annual financing of all European activities and interventions, the necessary resources, the priorities and the established objectives* (Văcăroiu, 2019).

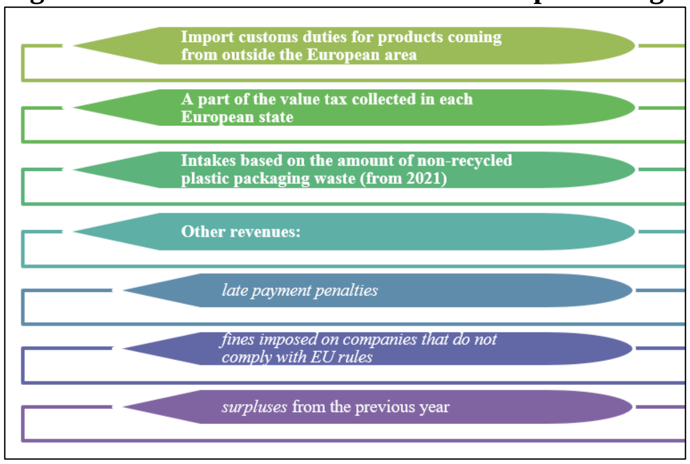
Apparently, the definitions of the budget are different, but they are centered on the same idea - the budget is an instrument by which the revenues and expenses of the European Union are regulated.

According to this point of view, to understand financial system of EU, we should understand: where does the EU get its money from?

1.1 Where Does the EU Get Its Money From?

Unlike the budget of a simple international organization, the EU budget must be financed from the contributions of the member states, as the fundamental objective is to strengthen integration. Figure 1 outlines which are the sources of income in the formation of the budget of the European Union.

Figure 1. Sources of revenues for the European budget



Source: Author's processing, using data from European Commission (Revenue) accessed 27.04.2023

Currently, the implementation of three other sources of income to the European budget is being negotiated (The next generation of EU own resources):

- the incorporation of 25% of the revenues from the sale of emission certificates in the EU in the EU budget;
- 75% of what the EU countries collect within the *Carbon border adjustment mechanism (CBAM) own resource* to go to the EU budget;
- contributions of 15% of the share of reallocated profits of very large multinational companies, according to *Pillar 1 of the OECD/ G20.*

From a structural point of view, 98% of the revenues to the EU budget come from own sources (Revenue).

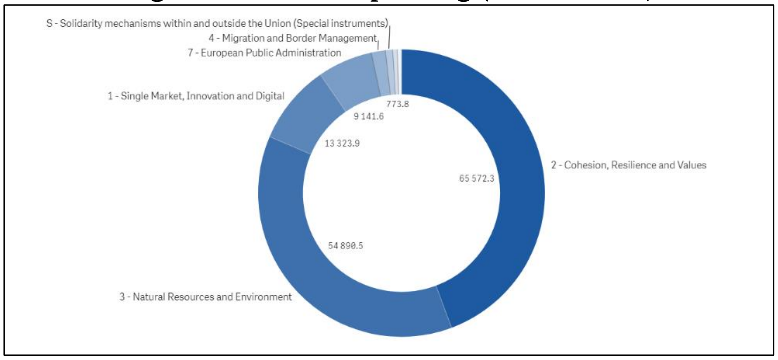
1.2 How and Where Is European Money Spent?

In general terms, the European budget is intended to subsidize different types of activities, from environmental protection, energy security, digital transformation, social and territorial cohesion, to green transition and sustainable policies that take into account the impact of present transformations on future generations. In 2021, with the implementation of *NextGenerationEU*, European economies started to become stronger and recover from the crisis generated by the COVID-19 pandemic.

Primarily, the budget is intended for investments. That is why the European institutions adopt multiannual financial frameworks for periods of up to 7 years. The current multiannual financial framework currently covers the period 2021-2027 (Revenue). It defines the priorities and the limiting frameworks for the allocation of European financial resources. It is foreseen that in the period 2021-2027 the management of the expenses will be carried out shared, directly and indirectly. Thus, about ¾ of the expenses will be managed by the national authorities together with the European Commission (shared). About 18% of the budget will be managed by the European Commission, its delegations and agencies (directly). About 8% of the budget will be managed by countries outside the European Union and international organizations (indirectly). The Recovery and Resilience Mechanism (RMR), executed through direct management (Revenue).

The main expenditure areas included in the current Multiannual Financial Framework are represented in figure 2.

Figure 2. Amount Spending (EUR million)



Source: Author's processing, using data from European Commission (EU spending and revenue 2021-2027), accessed 26.04.2023

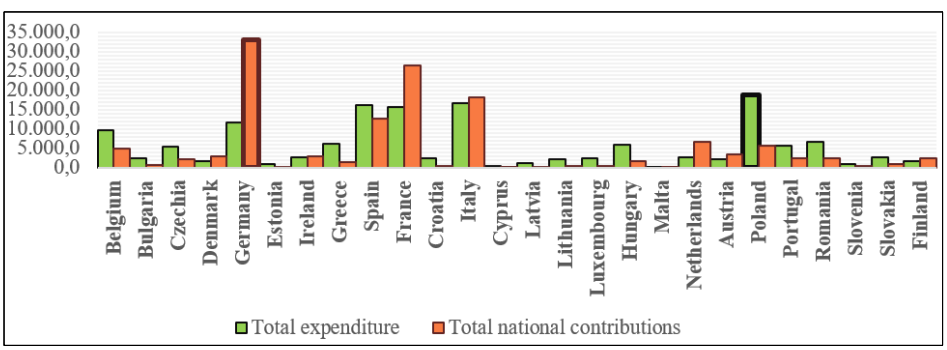
In absolute terms, the largest share of spending (65,572.3 EUR million) is intended for enhancing cohesion and resilience, followed by spending on the environment and natural resources (54,890.5 EUR million). The single market, innovation and digitization expenses account for 9.01% of the total projected expenses (EUR 147,948.8 million). Also, a non-negligible part is owned by the public expenses of European administration - approximately 6.18%.

The size and the manner in which the European budget is executed are set by the European Commission, the Council of the European Union and the European Parliament. However, the European Commission is responsible for managing the budget, with the Parliament having the role of evaluating how it has assumed its obligations and granting it, in the case of a favorable evaluation "discharge" (Revenue).

1.3 EU Country Budget Profiles

The largest share in the formation of European revenues is, as shown above, the EU's own contributions, which include contributions from the 27 member states, proportional to their gross national income. These contributions represent about 70% of EU revenues. In essence, the European institutions responsible for the formation and implementation of budget provisions do not aim to redistribute national wealth for a territorial uniformity of it, but rather to respond to the real and coherent needs of European citizens. In this sense, in order to clarify the issue of contributions, we propose to carry out an analysis of income and expenditure by country profiles. Figure 3 shows a comparative analysis.

Figure 3. Comparative analysis of expenditures and revenues from member countries to EU budget, in 2021 (EUR million)

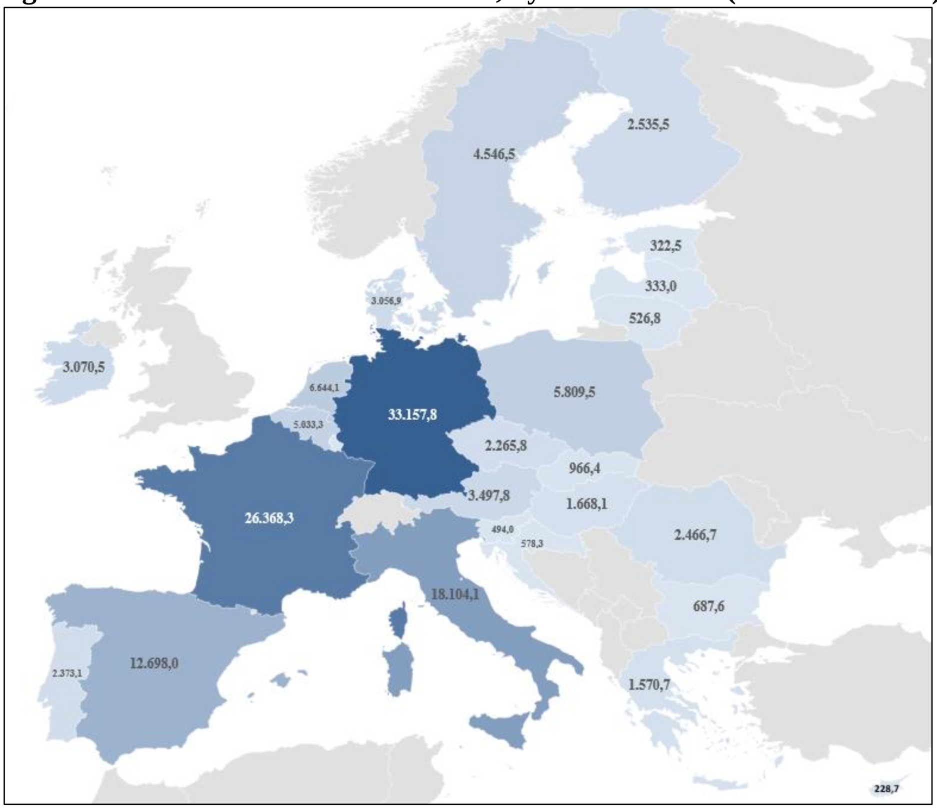


Source: Author's processing, using data from European Commission (Budget spending and revenue), accessed 24.04.2023

The figure 3 highlights that in 2021 the largest national contribution to the EU budget comes from Germany, amounting to EUR 33,157.8 million, while the minimum of EUR 149.6 million belongs to Malta. At the same time, the largest beneficiary of the European budget is Poland, with an assimilated value of EUR 18,727.4 million, followed by Italy, with EUR 16,745.6 million, and Spain with EUR 16,190.2 million.

The following map (Figure 4) illustrates the national contributions of EU member states. As can be seen, the countries with the highest contributions (colored in deep blue) are Germany, France, Italy and Spain.

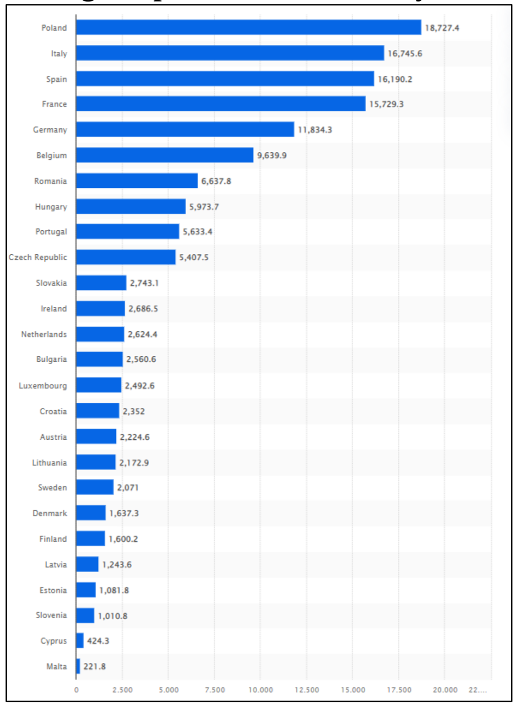
Figure 4. National contributions in 2021, by member state (in million euros)



Source: Author's processing, using data from The European Commission (Budget spending and revenue), accessed 30.04.2023

A comparative visual approach to spending per country is provided by figure 5. In the list of EU expenditures by member states, Poland, Italy, Spain, France and Germany occupy the first five positions. Comparatively, Romania was allocated 35.44% of the value of expenses with Poland (which is the leader).

Figure 5. European Union: budget expenditures in 2021, by member state (in million euros)



Source: *https://www.statista.com/statistics/253707/eu-budget-expenditures-by-purpose/, accessed 24.04.2023*

In what follows, we propose to analyze relative quantities outlining the relative sizes of states to the resulting benefits. Table 2 purports to provide the contextual framework for these.

Table 2. Ratios between total expenditure and total national contributions by country in 2021 (EUR mil)

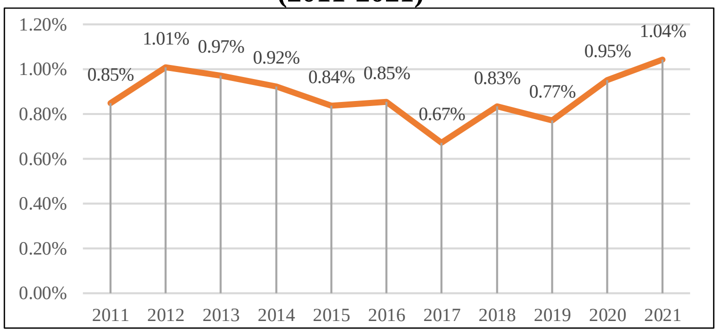
	BE	**BG**	**CZ**	**DK**	**DE**	**EE**	**IE**	**EL**	**ES**
Expenditure	9.639,9	2.560,6	5.407,5	1.637,3	11.834,3	1.081,8	2.686,5	6.282,3	16.190,2
Contributions	5.033,3	687,6	2.265,8	3.056,9	33.157,8	322,5	3.070,5	1.570,7	12.698,0
Difference, %	+91,52	+272,39	+138,65	-46,44	-64,31	+235,45	-12,51	+299,98	+27,50
	FR	**HR**	**IT**	**CY**	**LV**	**LT**	**LU**	**HU**	**MT**
Expenditure	15.729,3	2.352,0	16.745,6	424,3	1.243,6	2.172,9	2.492,6	5.973,7	221,8
Contributions	26.368,3	578,3	18.104,1	228,7	333,0	526,8	444,2	1.668,1	149,6
Difference, %	-40,35	+306,74	-7,50	+85,55	+273,47	+312,43	+461,18	+258,11	+48,32
	NL	**AT**	**PL**	**PT**	**RO**	**SI**	**SK**	**FI**	**SE**
Expenditure	2.624,4	2.224,6	18.727,4	5.633,4	6.637,8	1.010,8	2.743,1	1.600,2	2.071,0
Contributions	6.644,1	3.497,8	5.809,5	2.373,1	2.466,7	494,0	966,4	2.535,5	4.546,5
Difference, %	-60,50	-36,40	+222,36	+137,38	+169,09	+104,62	+183,84	-36,89	-54,45

Source: Author's processing, using data from The European Commission (Budget spending and revenue), accessed 30.04.2023

Reading the table allows us to see that Romania received **169.09%** more than it transferred to the EU budget. At the same time, Luxembourg collected 461.18% more than it offered. An opposite situation can be seen in the following countries: Denmark, Germany, Ireland, France, Italy, the Netherlands, Austria, Finland and Sweden. Of these, Germany seems to have the most disadvantageous position – it contributed to the European budget by 64.31% more than it benefited from it. However, we must recognize that the benefits of Germany and other net contributing Member States cannot be deduced solely from these calculations. It is assumed that the German state would benefit greatly from the free movement of goods, which would in some way compensate for this significant contribution, which is anyway set in value depending on the economic power of the states, but also to compensate for the financial gaps produced by withdrawal of Great Britain from the EU.

As far as Romania is concerned, the share of national contributions to the EU budget within the country's gross national income shows, starting in 2017, a relatively upward trend. An image of the evolution of this indicator for ten years (2011-2021) is represented in figure 6.

Figure 6. The evolution of the national contribution to the EU budget in the total gross national income of Romania (2011-2021)



Source: Author's processing, using data from European Commission (Budget spending and revenue), accessed 28.04.2023

It is also noted that, until 2017, the share of national contributions in the gross national income (GNI) decreased. The increase in 2021, from 0.95% to 1.04% can be explained, however, by the implementation of the provisions of the European Commission's European Resilience and Recovery Mechanism (MRR), which is a fundamental pillar of *NextGenerationEU* and according to which each state must to contribute more to the EU budget. Its total value for the period 2021-2027 is EUR 723.8 billion (Revenue).

3. PERSPECTIVE OF ROMANIA'S BUDGET

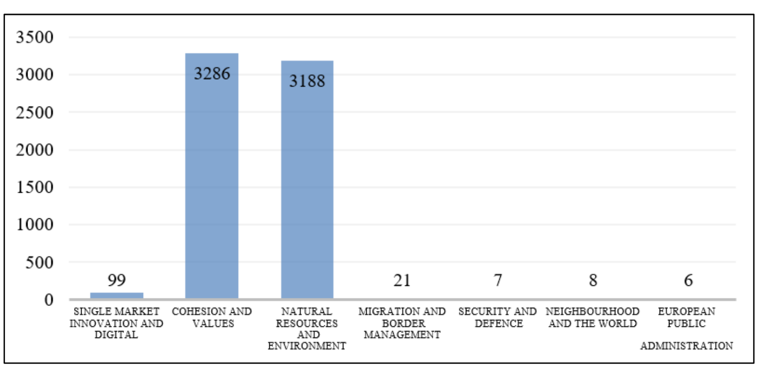
Being part of the 27 European member states, Romania contributes to the European Union's Budget and receive amounts of money from the European Budget outlining the EU's spending priorities for a given period.

An amount of €6,630 million euros was allocated to Romania in 2021, while the Romanian country contributed with €2.684 million to the EU budget in the same year (EU spending and revenue 2021-2027).

According to figure 7, the most financed Romanian domains in 2021 are Cohesion and Resilience to which €3.286 million was allocated and Natural Resources and Environment with €3188 million.

The funds corresponding to a multi-annual financial framework will finance all the Operational Programmes and the allocations to the objectives of the Cohesion Policy and on the Common agricultural policy.

Figure 7. EU spending for Romania's budget on each domain 2021



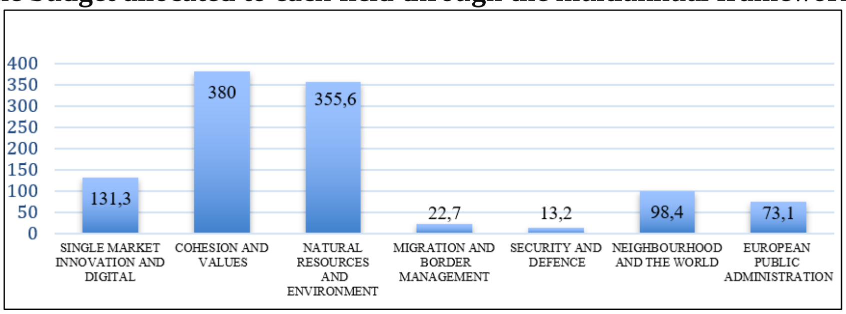
Source: Chart made on data provided by [Spending and revenue (europa.eu)](), accessed 06.05.2023

The Operational Programmes are the operational plans of the National Partnership Agreement, which is the agreement between Romania and the EU Commission outlining Romania's priorities for spending EU structural and investment funds under the EU Cohesion Policy. These Programming documents outline areas where Structural Funds monies are to be invested. Financing various sectors, these will significantly contribute to the country's growth and development:

- Education and healthcare funding can improve the quality of life for Romanian citizens.
- Infrastructure projects such as roads, bridges and public transportation can boost the economy and make the environment more sustainable.
- Social programs can help vulnerable populations and reduce poverty.

According to the figure 8, the European Budget for natural resources and environment is €355.6 billion for the period of 2021-2027. Natural resources and environment area includes the Common agricultural policy (CAP) and rural development, the most funded areas by European Union.

Figure 8. The budget allocated to each field through the multiannual framework 2021-2027



Source: Data provided by Redresarea economică - Cadrul Financiar Multianual 2021-2027 şi Instrumentul European de redresare/ Next Generation EU | Ministry of Foreign Affairs (mae.ro), accessed 07.05.2023

4. CONCLUSIONS

The result of this study aims at the structural and value approach of the European budget, creating the image that allows the understanding of the mechanisms and operating arguments of the European funds.

The European Union budget could have a huge impact on the development of Romania's economy, contributing through allocating funds to various sectors, such as infrastructure, education, healthcare, and social programs. In 2021, Romania received money from the EU budget twice as much as it contributed, being a real advantage and contribution to the Romania economy.

The research shows that Germany, France and Italy are the countries that have contributed the most to the European budget, while Poland, Italy and Spain are the countries that have been allocated the most European funds.

We find that the formation and management of the European budget is subject to a strict regulatory framework and does not admit deviations.

We believe that the added value of our study is given by the possibility of forming a holistic representation, which contributes to the formation of a way of thinking based on current economic realities and which takes into account the argument of income formation and expenditure allocation.

A future direction of research aims to narrow the subject, highlighting the role of European contributions in the development of Romanian agriculture.

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STANDARDISATION AMONG COMPANIES

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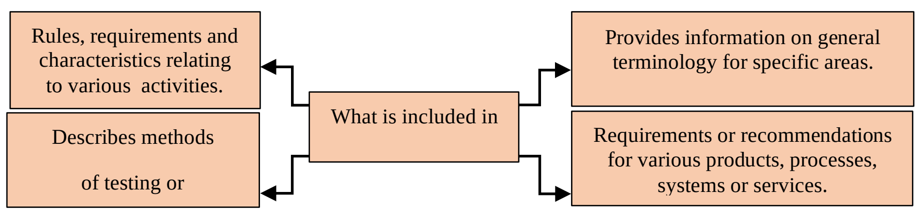
Abstract:
In this scientific paper I have chosen to bring to the attention of readers how standardisation influences the way a company does business, with the aim of better understanding what standardisation means within companies and the differences between the types of standards that exist worldwide. The paper includes a brief presentation of the concept of standardisation and the typology of global standards that can be applied in companies, followed by a case study focused on the application of European standards in Small and Medium Enterprises, adding at the end some conclusions based on the information provided.

Keywords: Standardization, Standards, European Standards

1. THE CONCEPT OF STANDARDISATION

Standardisation is found in all areas of economic life. It guides the creation of products, goods and services, ensuring consistent quality and equivalence with other compatible products and services of the same industry. Standardisation also contributes to ensure the safety and conformity of manufactured goods, with the parties involved in the standardisation process being both corporations and standardisation organisations and consumers.[4]

Figure 1. What is included in a standard?



Source: https://issuu.com/standard.md/docs/importan__a_standardelor_pentru_pla

2. TYPES OF STANDARDS - COMPARATIVE ANALYSIS

2.1. Professional Standards

Professional standards are those adopted by professional organisations. They require a certain level of performance for the position in the company.

In other words, "The professional standards in the company were some of the strictest and highest in the industry."[5]

Having professional standards in your company means making a commitment. A commitment that you can run your company in a professional manner that values its customers and follows proper operating standards. All of this helps to build customer loyalty, but also the free publicity you receive through recommendations.

[4] https://corporatefinanceinstitute.com/resources/economics/standardization/
[5] N., Sam M.S., "PROFESSIONAL STANDARDS," in *PsychologyDictionary.org*, April 28, 2013, available online at: https://psychologydictionary.org/professional-standards/ (accessed May 10, 2023)

It is worth remembering that any company that is run in a professional manner and operates in a healthy environment brings with it financial and social prosperity as well as benefits to the local community.[6]

2.2. Company Standards

Company standards are adopted by companies or autonomous companies. They are represented by a document which specifies the main characteristics of the products or services, together with the correct way of performing them. Company standards can be used to issue certificates of conformity and guarantee certificates, which help the manufacturer to position itself in the eyes of its customers.[7]

The success of any company is therefore due to the knowledge and correct application of standards, which in turn bring multiple benefits: increased performance, quality products or services, attention to the safety of the working environment, happy employees, reduced costs and compliance with the legislation in force.

Here are the main standards that a company should have in place:

- Business continuity approach
- Address communication and data security
- Addressing product and service quality
- Health and safety approach
- Addressing social responsibility
- Risk management approach

2.3. National Standards

National standards are developed, adopted and published by a National Standards Organisation (NSO), in our case the Romanian Standards Association (ASRO), whose role is to create a favourable climate for the application and development of national standards in the economy. All national standards are transposed from European standards, with amendments and possible withdrawals being made only to those standards that are contradictory.[8]

The standards and requirements for nationally traded products are as follows:

- Obtaining the CE marking (applicable only to products where Union legislation requires the marking to be applied);
- Standardisation of product quality and safety (gaining consumer confidence);
- Technical specifications of products (size/dimensions, weight, composition, labelling, packaging, testing);
- Product certification (attestation by a third party certification body).[9]

2.4. European Standards

There are 3 European Standards Organisations that can adopt European standards:

- European Committee for Standardization (CEN)
- European Committee for Electrotechnical Standardization (Cenelec)
- European Telecommunications Standards Institute (ETSI)

[6] L., Balle, „Professionalism Standards”, in smallbusiness.chron.com, https://smallbusiness.chron.com/professionalism-standards-2906.html (accessed May 10, 2023)
[7] https://www.angelfire.com/sc/simplu/faqstandardeR.html
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All European standards are only issued in collaboration with representatives of companies or members of the European standardisation bodies that are relevant to the process.

Mention should also be made of the Small Business Standards Association, which represents small and medium-sized enterprises in the standardisation process in terms of producing products or offering services on the market.[10]

2.5. International Standards

The international standards are represented by a document, developed following discussions between experts from several countries, for worldwide recognition. This document contains rules, processes, characteristics and even guidelines, which users can use to repeatedly achieve standardised results.[11]

As international standards are intended to be recognised worldwide, the development and adoption of these standards is the responsibility of international standardisation organisations such as:

- ISO (International Organization for Standardization);
- IEC (International Electrotechnical Commission);
- ITU (International Telecommunication Union);
- IFAN (International Federation for the Application of Standards).

3. STUDY CASE – WHY SHOULD EUROPEAN STANDARDS BE APPLIED IN SMALL AND MEDIUM ENTERPRISES (SMES)?

As a key factor in the European market, it is important for Small and Medium Sized Enterprises to be aware of the added value of standards to their business and the various ways to participate in the standardisation process. CEN, the European Committee for Standardisation, and CENELEC, the European Committee for Electrotechnical Standardisation, are committed to helping Small and Medium Sized Enterprises as they play a vital role in the European economy. Around 99% of European companies have Small and Medium-sized Enterprise status, employing almost 81 million people and providing 66% of jobs in Europe. Small businesses are therefore key to economic growth and employment in Europe, with standardisation enabling small and medium-sized enterprises to increase their productivity and access wider markets.[12]

Small and Medium Enterprises should know that it is not enough to be creative to gain a competitive advantage over competitors. It takes significant innovation - something that would set you apart from your competitors. Innovation is indeed the successful introduction of a new product or service to the market, but when European standards are met, not only is success guaranteed, but consumer confidence can be gained much more easily.

European standardisation stimulates innovation and competition, while increasing the safety and quality of goods and services circulating in the global marketplace. These are therefore the main advantages that Small and Medium Enterprises can enjoy when they choose to apply these standards:

- Promoting innovation and competition
- Providing a direct presumption of conformity
- Stimulating innovation
- Anticipating and adapting the requirements of products to be launched on the market
- Ensuring convergence and interoperability

As an example, we could even take a small local business, the Honey Taxi, which now delivers all over the country.

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[10] https://europa.eu/youreurope/business/product-requirements/standards/standards-in-europe/index_en.htm
[11] https://www.iec.ch/publications/international-standards
[12] S., Penny, „The importance of standardisation for SMEs”, in „Guide to the European standardisation process”, december 2010, http://www.standard.md/public/files/Importanta-standardizarii-pentru-IMM-uri7433e.pdf (accessed May 10 2023)

The Honey Taxi is a business that started with "passion, ambition and a bit of madness"[13], as the founders like to describe it. The small business offers a wide range of quality products such as honey, propolis, parsnip, royal jelly and many more, much loved by consumers.

However, the products do not meet all the European standards to be outsourced, and at the moment the business continues to be local and national only.

Even though there is potential for export, and the idea of making products from 100% natural honey is in high demand, the Honey Taxi business has improvements to make and European standards to implement in order to enjoy all the benefits mentioned above.

4. CONCLUSIONS

All the information on standardisation of products or services within any company provides solutions that contribute to increasing the competitivity of companies and new development opportunities. In particular, all the opportunities that arise with European standards enable efficient business operations and new markets for the company's products and services.

Therefore, all small and medium-sized enterprises should consider the application of standardisation in order to develop harmoniously, but also to facilitate the economic growth of European countries.

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[13] https://taxiulcumiere.ro/despre-noi/

THE POSSIBLE SUSTAINABILITY AFTER THE CURRENT ECONOMIC WORLDWIDE STRUGGLE

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Abstract:
Considering the state of the economy worldwide, we have been slowly damaged by the 2000 pandemic crisis, restraining the business activities that required direct contact with people in order to lower infection rate and the spread of the Covid-19 virus and after the population saw a glow of hope in form of the anti-covid vaccine appearance and business restart to function again, the economy was stroked again by the effects of the Ukrainian War. So, the objective of this article is to discover why we need a sustainable economy, how sustainable is Romania and how the economy can become less dependent on others energy and begun to strive build a sustainable one, based of renewable energy, to lower or completely eliminate the carbon footprint and the pollution created using the classic fossil fuels non-regenerable resources. Emphasis will be placed on one of the most polluting sectors, namely the transport sector. Analyzing the positive and negative aspects of the current offer on the market, which is the best and what should we expect in the current moment. Hybrid vehicles will not be mentioned to simplify the main idea, considering the technical nature of the subject.

1. HOW THE ECONOMY FUNCTION

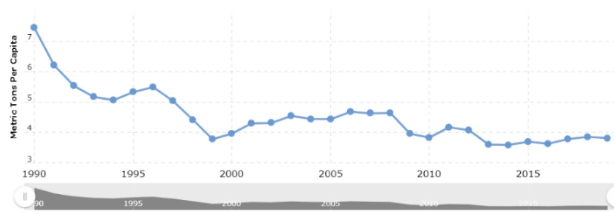
If we attribute the economy of a country a physical body from an anatomical perspective, we could say that the pandemic causes an impediment of the body to move properly and the war in Ukraine shortened the supply of resources, essentially for an economy to continue its activity and prosper. In a few words, we become aware of how dependent to non-regenerable energy in all forms from other countries (like Russia) we are.

A healthy economy is defined, build and maintained by healthy people. So, considering this premise, in what way the economy influences the environment we live, either in a positive way or a negative, this will affect our well-being. A salubrious environment will cause an enhance of people health. More healthy people mean less medical expense, so the supply of workers on the labor market will rise. Besides that, having clean air and water, sanitation and wide green space will contribute to grew the quality of life in a country, improving productivity and mental health. So, the ripple effect generated by how the economy carries out its activities, namely the real costs on long term, will be paid in the future by all population in a way or another. The degradation of the environment is costly for the economy, a pollute environment means more people are prone the get sick, diseases will impede the work, more illnesses could rise the mortality rate and so on. Then the solution to mitigate this problem is to gradually change our methods, to more clean and green alternatives.

2. HOW MUCH SUSTAINABLE IS ROMANIA

In Romania, from 1985 to 2016, the consumption of fossil fuel progressively decreased from approximately 96% to 72.52%. At the same time, from 1990 to 2017, the share of electricity generated by renewable power plants in total electricity generated by all types of plants increased from 17.74% to 39.75%. Meaning a change is happening, but considering its long span, that change is very slow, but at least the progress is visible, contrary to the evolution of carbon emission (CO2):

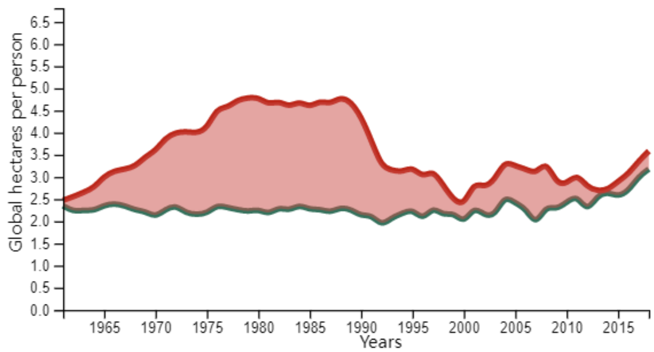
Figure 1. CO2 tons per capita



Source: https://www.macrotrends.net/countries/ROU/romania/carbon-co2-emissions

It appears from the figure above a significant decrease from 1990 to 2000, but from that date no major change were registered. The Romanian CO2 emissions didn't change much compared to the previous data, putting pressure on the government to improve the policies and measures related to reduce emissions, due to the treaties signed by the country, but Romania doesn't have a clear energetic strategy to achieve the goal of "net zero" by 2050 and the fact that it is on the list with a biocapacity deficit does not contribute to improving the current situation:

Figure 2. The evolution of Romania's ecological footprint



Source: https://data.footprintnetwork.org/#/

From figure 2, it appears that throughout the period Romania registered a biocapacity deficit. Their ecological income per person was always lower than their ecological footprint per person, resulting in that deficit. The biocapacity is the difference between how much a country consume compared to how much their ecosystems can renew the resources. In the case of Romania, the deficit is caused by dependence on imports and carbon dioxide emissions. So, in general we consume more then we can afford.

The basic measures to reduce the carbon footprint in Romania include: the development of new green spaces in localities, production of energy from renewable sources, the development of bicycle path and so on. But one of the most significant is “the Rabla Plus program”, for the purchase of a 100% electric car, with the mandatory condition of scrapping the old car. The goal of the program is to introduce gradually the electric cars on the market. This program is important because fossil fuel-based road transport represents the most significant source of air pollution in the transport sector. One of the main elements that support and maintain the stability of the economy is the transport sector. The goods produced by an activity, in order to be delivered and bought by the final consumer, they need to be transported by means of a vehicle (in general, considering the distance). Therefore, if all vehicles are powered by fossil fuels, carbon emissions continue to maintain or even increase as economic activity increases.

Romania is dependent on energy imports, so in order to gain its independency, a clear and efficient plan towards all sectors it's mandatory, to reduce the carbon footprint.

3. CLASSIC COMBUSTION ENGINE VS ELECTRIC ENGINE

Vehicles with an electric engine work on the basis of electricity, so from the start to the end of the ride these don't generate pollution, instead internal combustion engines require the burning of a flammable substance (petrol, diesel, natural gas), producing carbon dioxide and eliminating it in the environment. From the environmental impact point of view, consumers are presented with the internal combustion car as polluting and the electric car as completely green, with no carbon emissions. But, considering the daily needs of people, which reflect the present and less the possible future benefits of sustainability, it is necessary to differentiate from the consumer's perspective, namely what interests him when he chooses between the 2 types:

• *Acceleration* – electric cars allow much faster acceleration compared to internal combustion ones, because they generate force (torque) instantly, transmitting the effect produced to the wheels efficiently. In combustion machines, that force is created in delay by the combination of 3 elements: fuel, air and spark; and the maximum force is reached gradually and not instantly, from the beginning.

• *The cost* - the price of an electric car is higher compared to the combustion ones, but this fact reflects the up-front cost, because if you take into account the reduced cost with maintenance and the governmental grants, in the complex you can reach the same amount or a lower value.

• *The time required for fueling* - in the case of combustion-powered cars, they need a few minutes to fill the tank and are ready to hit the road, and fuel stations are frequent. Instead for electric cars, they are offered fewer fueling stations (especially in rural areas), because the technology is not yet so widespread, and most people do not own an electric car. And the time required to fully charge an electric car is approximately 8-10 hours (the values may vary depending on the model, brand, age of the vehicle, etc.).

To these 3 elements listed above, total sustainability is added, so not the superficial presented by car manufacturers. Thus, it is necessary to deepen the technical processes for a complete understanding, namely we will focus on: fuel source, fuel consumption and manufacturing.

The main component of an electric vehicle is the battery, and the initial environmental impact derived from their production, compared to internal combustion engine components, is much more significant (producing a battery for electric vehicle release about 8.8 tons of CO2 versus 5.6 tons for a petrol or diesel). One of the main elements of the battery is lithium, a material that must be mined, and this process generates a large quantity of greenhouse gases. This problem is related to the efficiency of the manufacturing process, which values the production itself, without considering the carbon footprint. Thus, as much as the demand for electric cars on the market will increase, so will the demand for batteries, increasing the carbon footprint, if this problem is not addressed. Another negative aspect related to batteries is their recycling, due to the volatility of the internal components, which can catch fire and explode, causing fires and emissions of harmful gases, if they are not managed properly. But this problem depends on how quickly the industry evolves to solve these issues, because it is still in the initial stage, compared to the combustion vehicle industry. The negative environmental impact caused by electric vehicles increases if the electricity used to power them comes from burning fossil fuels (ex: coal power plants), so the carbon footprint can increase or decrease depending on how much we rely on renewable resources to produce electricity (ex: hydroelectric powerplants, solar powerplant, etc.).

Combustion vehicles generate an environmental impact directly through their use and indirectly through their production, instead electric ones, even if indirectly they have initially a bigger carbon footprint, they more than make up by having 0 emissions during their use. So electric cars are more sustainable than combustion ones.

The reputation of electric cars created by vehicle manufacturers (such as Tesla) and strengthened by governments, focusing on the positive aspects related to the absence of carbon emissions and environmentally friendly technology, has influenced the formation of the idea in the mind of the consumer that electric cars are the future, making them desirable in their eyes. But, as innovative and sustainable the electric cars are, the biggest obstacle they have to face is the battery capacity and the extremely long time to wait for a full charge, namely the practical aspect. Practically speaking, if the environmental impact is not taken into account, combustion-powered cars are more reliable and stable than electric ones, because they do not present the obstacle of the battery. Thus, the consumer's trust in electric cars decreases, especially if you take into account the stability and efficiency that combustion cars offer in the context of travelers outside their own locality, over long distances, and the fear of running out of energy, stuck on the road, without fuel stations, is large. But another competitor has appeared on the market of sustainable vehicles, which, like electric cars, do not pollute, namely hydrogen ones.

4. HYDROGEN POWERED VEHICLES

Hydrogen vehicles have internal combustion engines converted to use hydrogen as propellant, in exchange of the classic fossil fuels. In a manner similar to vehicles that run on compressed natural gas instead of petrol, they have an armored tank (necessary considering the extremely flammable nature of hydrogen) that stores the gas under pressure (hydrogen is much less energy dense than petrol/diesel so it needs to be compressed) and the only emissions on the road generated by this vehicle are water vapor. Comparing electric vehicles with hydrogen ones, the main difference is the practicality offered by hydrogen cars. In a few words, hydrogen vehicles have approximately all the benefits of combustion cars that use fossil fuels, without the negative aspect related to the environmental impact, because they do not generate carbon emissions. These vehicles are completely mechanical, so they can be repaired and not simply discarded. Thus, compared to the 2 types of vehicles discussed previously, this category is more sustainable. But the positive aspects stop here, because the main problem of hydrogen vehicles, ironically, is the hydrogen itself, namely:

• Hydrogen is extremely flammable and explosive which would make a huge safety hazard.

• This gas is very difficult to process and store.

• The high temperatures required for combustion produce during the process nitrous oxide (a pollutant), and to reduce their generation, the amount of oxygen must be increased for a complete combustion, but this makes the car significantly weaker compared to their petrol-power counterpart.

• Lower efficiency can be solved by increasing the engine size, in order to make sufficient amounts of horsepower, but a bigger engine needs more fuel to run. So, considering the highly complicated way of processing and storing available at the moment, this technology is way more expensive than the others.

• The hydrogen engine must be much more durable, so the production process is much more expensive overall.

• The production of hydrogen at an industrial level requires the use of significant amounts of fossil fuels, and the methods that use renewable energy are extremely expensive.

5. CONCLUSIONS

Currently, technological restrictions and extremely high costs limit the complete replacement of fossil fuel vehicles with electric or hydrogen ones, the same discourse can be applied to renewable energy plants. The necessary investments in research, development, replacement and their implementation are enormous, considering the situation as a whole.

In the end, whether we refer to electric vehicles, fossil fuel or hydrogen, either directly or indirectly they generate some form of pollution, and at the present time a vehicle that generates "0 carbon emissions and no environmental impact" does not exist, because even if the car in question does not directly pollute and is powered by energy from renewable resources, the materials from which it is made, specifically the collection, processing and all the processes that start with the intention of producing the respective good and end with that product finished, ready for sale, generated a carbon footprint throughout the production stages, polluting the environment. In order to truly address this issue related to the carbon footprint and all the negative effects it generates on the environment and indirectly on us over time, specific policies and investments are needed for each sector in order to analyze and streamline each operational process. It is not enough to focus only on the elements that are obvious and come to the surface the most, that is, it is not enough just to switch the energy source from non-renewable to renewable in order to be able to define it sustainably, because an economy is made up of all the human activities carried out in the sphere of production, distribution and consumption, so every element of the economy must work together to really achieve that general objective of 0 carbon emissions at the country level. In Romania, we are gradually and slowly trying to reach that goal by using clean and sustainable sources of energy, using nuclear power plants, hydroelectric power plants, photovoltaic panels, etc. But the implementation process is a long and extremely expensive one, in addition to the continuous investments in necessary research and development (considering that we are only at the beginning), but the events of recent years, starting from the pandemic to the war in Ukraine, have demonstrated how we are dependent on imports, namely on material and energy resources that come from other countries, and when a crisis occurs, general costs start to rise, inflation as well, the population's income cannot keep up with the increase in prices, and poverty continues to be more and more tangible and deep throughout the country, and these facts are reflected in the economy, laying the basis for the emergence of a possible recession.

In conclusion, an economy can be defined as sustainable when each component contributes to some extent to achieve that objective, and the long-term benefits generated by a sustainable economy can bring the true prosperity that the population deserves.

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THE TERRORISM: THE CLANDESTINE FINANCING`S BLACK COLLAR OF TAX HAVENS

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Abstract:
In an attempt to control uncertainty in the globalized world, authorities focus on the issues posed by tax havens or offshore financial centers (OFCs) that lack fiscal transparency and provide opportunities for terrorist organizations to fund their activities. The aim of this study is to examine previous expert research on terrorist financing over the past two decades, with a focus on profiling the terrorist financier and the intervention techniques used by Anti-Terrorism Financing (ATF) institutions. The paper also explores the impact of terrorist financing on the global economy and suggests potential areas for future research. It examines three significant jihadist attacks that were supported by tax havens, highlighting the need to address informational secrecy and lack of transparency in combating terrorism financing.

Keywords: Anti-Terrorism Financing, Black-Collar, Tax Haven, Terrorist Financing

1. BACKGROUND

The economic theory dealing with terrorism assumes that terrorists are rational actors who resort to the shadow economy as a means to redistribute power and financial resources. According to this theory, legal and unconventional channels are insufficient to achieve their goals. According to this perspective, jihadists employ terrorism as a rational strategy to assert their power and achieve their objectives through intimidation, resorting to illicit means of financing that cannot be accomplished through legal or democratic channels. Moreover, the terrorists' action plan concerns the creation of strategic gateways that involve a detailed analysis of the risks and benefits that may arise by raising funds in a covert network. The involvement of a significant number of financial and human resources in extremist organizations serves to achieve political and ideological aims. Terrorist financiers often employ similar channels to those used in money laundering, but they typically utilize fewer placement, layering, and integration techniques. Instead, they tend to opt for methods that preserve a high degree of anonymity and lack of suspicion (Angela, Raymond and Lin, 2012).

The phenomenon of financing terrorism emphasizes the passage of a route covered by the black economy, so that jihadists can come with requests for licit or illicit funds, their collection, and then their distribution in support of terrorist actions. Thus, the term describes the practice of providing funds or financial resources to support jihadist activities that take place in certain strategic points (Robert, 2011). Furthermore, this ancestral acceptance, because this phenomenon has existed in different forms throughout history, but took shape with the growth of globalization and technology, is shaped according to the circumstances in which the extremist actions take place.

Broadly speaking, just as the term financing of terrorism can be definitive through the prism of several angles, so it also happens in the case of tax havens, a single perspective is not required. In broad terms, tax havens or offshore tax centers mark the areas of refuge for individuals or companies to evade the payment of tax obligations.

Often, these zero tax centers provide competitive advantages, such as minimal or non-existent taxes on investments, assets, or international money transfers that are not closely monitored for approval or rejection. However, this comes with a paradoxical reliance on the high level of protection offered by data confidentiality and institutional secrecy (Daniela, 2012). Tax havens or offshore financial centers appear to be deliberate channels, designed or left to decay, that enable the flow of illegal or luxurious activities by eroding the taxable material.

This research presents the theory of financing jihadist activity through tax haven networks, organized into four charts. Chart one provides an overview of how the financing of terrorism in the 21st century is approached in specialized literature. Chart two presents the jihadist framework used to finance extremist activity, including a profile of the extremist financier. Chart three examines the response of specialized institutions in combating terrorist financing. Chart four analyzes the guidelines for terrorist financing through three significant jihadist attacks and the recruitment of funds through offshore centers. The paper concludes with a summary of key points on terrorist financing's impact on the global circular economy.

2. LITERATURE CRITIQUE

The threat of terrorism persists as terrorist organizations continually seek out innovative methods for financing their operations. In recent times, the exploitation of tax havens as a source of terrorist funding has come under close scrutiny. These jurisdictions, characterized by low tax rates or a complete absence of taxes, stringent bank confidentiality laws, and minimal financial regulations, have proven to be highly conducive for terrorist financing, owing to their anonymity and lack of transparency.

The aim of this literature review is to assess the magnitude of the problem of financing terrorism through tax havens, the techniques used for laundering money and transferring funds to support terrorist operations, and the effectiveness of measures adopted by governments and international organizations to combat these issues. Through a comprehensive analysis of scholarly literature, this review seeks to provide an in-depth understanding of the obstacles and opportunities associated with tackling the financing of terrorism through OFCs over the past two decades.

The shift away from the expansion of extensive policies by governments, financial institutions and international institutions towards terrorist financing was marked by the terrorist attacks of September 11 or 9/11 (Mark, **2002**). Cross-border terrorism is characterized by two primary economic factors. The first is the requirement for significant and ongoing funding, as well as the need to transfer these funds across international borders. The second factor pertains to the potential externalities that may arise from interdicting international terrorism in a particular territory. Although the costs associated with such efforts are typically localized, the potential gains can be realized through international cooperation (Valpy, **2004**). As stated by Lorraine and Robert (**2004**), the Organization for Economic Co-operation and Development (OECD) has listed small island economies and emerging states as non-cooperative tax havens. These jurisdictions have been accused of refusing to participate in the international tax system, and have become conduits for the transfer of funds used for terrorist financing.

In the perception of Donato (**2006**), the topic of terrorist financing revolves around offshore financial centers (OFCs), which are divided into three key aspects. First, great care must be taken in formulating and updating the financial blacklist to prevent errors in incentives or penalties. Second, mere compliance with formal rules does not guarantee that a country is not financially lax, as the incentives for laxity may be deeply rooted in the country's economic and institutional structure. Ultimately, the international community should develop country-specific policies to address these underlying factors, as the degree of laxity and rationale may differ from case to case. According to Aurel and Daniel (**2007**), their study conducted a comparative analysis of ten Southeast Asian nations to examine how governments combat terrorism financing. The findings indicate that Singapore has the highest level of compliance and implementation among Asian countries, followed by Thailand and Indonesia. Malaysia, the Philippines, and Brunei fall behind with a significant margin. Although these countries have laws in place, the effective implementation is inadequate. The relevant government institutions are not well-established, and the international cooperation in law enforcement is sluggish.

Improved international standards for accounting transparency have become a priority due to the use of international tax loopholes to finance terrorist organizations in low or zero tax rate safe havens (Meri, **2011**). On the other hand, Robert (**2011**) used the ARIMA method to examine the effectiveness of the blacklisting of tax havens by OECD and FATF (Financial Action Task Force) in reducing terrorist financing. The findings revealed that the inclusion or exclusion of tax havens from the blacklist did not have a significant impact on the volume of financial activities. This suggests the possibility of an underground network operating outside the realm of tax havens, serving as a foundation for terrorist financing.

Ana (**2013**) perceived an outlook for the financing of jihadist activity is facilitated through four major groups of tax havens: former Western colonies, sovereign states, countries controlled by cartels, and emerging economies. Efforts to combat this phenomenon have mainly focused on unilateral measures, such as enforcing fiscal transparency of foreign companies, as well as multilateral measures, such as fiscal harmonization and information sharing. From the point of view of Irina (**2015**), the concept of charity paradox as a major source of funding for terrorism has emerged in the past decade, deviating from its original purpose. Charities and fundraising activities were originally developed to provide assistance to those in need, with those who had the means offering help. However, financially powerful individuals and companies now pledge funds for various charitable causes such as environmental threats, underprivileged children, abused women, outstanding individuals, and endangered plant and animal species. Neep (**2020**) described tax havens have become a hotbed for extremist fund transfer pricing and profit shifting. To counter this, two methods have been proposed to stop the flow of terrorist funds. The first involves applying the principle of competition to determine the taxes paid by multinational corporations (MNCs) in a particular jurisdiction. The second method proposes using a formula to allocate taxes payable by MNCs between countries.

In their article titled "Can Artificial Intelligence, RegTech and CharityTech provide effective solutions for anti-money laundering and counter-terror financing initiatives in charitable fundraising", Charanjit and Wangwei (**2022**) discussed the influence of CharityTech on terrorist financing. Also, they identified a new trend in terrorist financing called "crypto havens." This term refers to the emergence of virtual currencies as a novel way to evade taxes and serve as fiscal havens, allowing for the circulation of vast amounts of money that facilitate the financing of terrorist activities by Islamic states. This phenomenon has been observed in Afghan transactions, which pose a threat to the fight against terrorism financing. To combat this, special laws must be developed by the Afghan government in the context of war, as outlined by Mohammad, Nooman & Ahmad (**2022**). Luxury free ports, built specifically for tax evasion, offer a unique level of anonymity for jihadist transactions, making them conduits for financing terrorism. These ports can serve as entry points for goods and currencies used to fund terrorist activities, as well as for trafficking contraband such as weapons and drugs that can be sold for financing. Moreover, ports can also facilitate money laundering through opaque financial transactions or offshore companies (Chloe, **2023**).

One notable discovery is that tax havens are commonly employed to obscure the beneficial ownership of assets, thereby impeding law enforcement agencies in their efforts to trace the movement of funds and pinpoint individuals responsible for providing financial support to extremist activities. While several international initiatives have been implemented to combat money laundering and the financing of terrorism, the effectiveness of these measures remains uncertain. Despite some headway in identifying and disrupting terrorist financing networks, the use of tax havens persists as a means for terrorist organizations to raise and transfer funds. Prominently, these studies reveal that tax havens often serve as channels for transferring funds from legitimate sources to support terrorist activities.

3. JIHADIST FINANCIER PROFILING

By analyzing data gathered from documentaries on the Syrian conflicts, it is clear that jihadist groups finance their terrorist activities through various means that adapt to changing circumstances, as reported by Real Crime. Thus, gaining insight into the tactics of terrorist financiers requires penetrating their operational points.

In an attempt to finance their activity, jihadists are trying to uncover the patterns of the terrorist apparatus by reaching several levels. The collection of the dirty money obtained follows a very well set up circuit that makes it very easy for the money trail to be lost in apparently legal activities.

Table 1. The circuit and financing sources of jihadist brigades

FINANCING PHASE	FUNDING SOURCES
***PLEADINGS* -** terrorist organizations employ various tactics to obtain the necessary funding for their operations. These can include applying direct or indirect pressure on individuals or companies, or operating in the shadows of major financial players in the markets to obtain illicit funds to finance their activities.	
FOUNDARISING: once the `sponsorship` of the jihadist activity is found, the collection of funds or financial resources from legal or illegal sources begins most of the time.	*Cryptocurrencies*: terrorist groups resort to transfers and virtual asset digital wallets to finance their operations because they offer quick and anonymous transactions that are difficult to trace. *Recycling money*: terrorists can utilize funds acquired from criminal activities that are transferred through bank accounts, which creates a strong link between some terrorist groups and criminal organizations. *Forgery*: terrorist Islamists finance their activities by counterfeiting money or using fake coins that are circulated. *Blackmail*: terrorist groups resort to extortion by means of violence and intimidation to extract money from individuals, businesses, or communities. This includes forcing people to pay for protection and levying "revolutionary taxes" on populations residing in areas under their control. *Narcotics, weapons and endangered species:* the revenue generated from smuggling weapons, drugs, and endangered animals like elephants, rhinos or tigers through encrypted platforms constitutes a major source of financing for terrorist activities. The proceeds from such illegal activities are often channeled to other terrorist groups or individuals engaged in criminal activities. *Bullion.*: terrorist groups can finance their activities through black markets or commodity exchanges dealing with precious metals, such as gold or silver, which makes it challenging to trace the source of the goods. *Precious extraction: t*errorist groups often infiltrate regions abundant in gold or diamond deposits, extracting these resources for sale on the black market, thereby generating funds to finance their activities. *Charities*: terrorist organizations can obtain illicit funding through private donations or charities that pose as aiding orphans or affected families. Donors may be persuaded to contribute funds by playing on their religious or political beliefs or by presenting a seemingly noble cause. Under the guise of humanitarian projects or noble causes, terrorist groups may exploit charitable organizations and foundations for funding, where donors are unaware of the true destination of the funds. *Oil trade and smuggling of archaeological artifacts:* extremist groups can acquire control of oil fields and generate illicit income by selling oil or artifacts on the black market, thereby creating a revenue stream to support their activities. *Burglaries and heists*: some methods employed by terrorists for financial gain include theft from banks or jewelry stores, as well as abduction for ransom. *Human trafficking*: revenue generated from activities such as human trafficking or organ trafficking is significant. *Backers*: terrorist groups can also obtain funding from foreign entities, such as financial aid provided by foreign countries or organizations that share their ideologies and aim to assist them in accomplishing their objectives. *Trafficking of upscale items:* luxury clothing, watches, perfumes, and other high-end goods are among the items used to fund their activities. *Wagering*: to generate extra revenue, terrorists may operate their own casinos or engage in illicit gambling.

<table>
<tr><td rowspan="1">LAUNDERING: illegally obtained money can undergo a process of laundering, which aims to make the funds appear legitimate, and this process can be difficult to trace.</td><td>Approved firms: commercial companies are sometimes used to finance terrorism, enabling the conversion of illicit funds into legitimate-seeming assets or as a means to acquire funds from legal sources such as loans.

Shell companies: creating shell corporations or taking over existing ones is a common tactic used by terrorist groups to obscure the sources of their financing and to make it difficult to trace their transactions.

Property: terrorists may utilize real estate by acquiring or constructing properties using funds obtained through illegal activities, and subsequently selling or renting them as a means of laundering the money.</td></tr>
<tr><td colspan="2">TRANSFERING: terrorist groups can receive apparently clean funds through the assistance of safe haven cartels. These cartels operate through a circuit of tax havens or countries with significant illegal movement, facilitating the transfer of funds to terrorist groups. An example of such a circuit includes Venezuela, the Netherlands, Pakistan, Canada, Switzerland, and Syria.</td></tr>
<tr><td colspan="2">MIDDLEMEN: a cohesive crew is recruited to obscure the source of the financing and make the money flow more convoluted.</td></tr>
<tr><td colspan="2">EXCHANCING: once laundered, illicit funds are used in Islamic countries to obtain resources necessary for terrorism, such as weapons and ammunition, and to improve military strength by acquiring missiles.</td></tr>
</table>

Source: Author's processing, using data from documentaries about terrorist attacks

After examining the pathway of the intended terrorist financier, it becomes clear that the cycle of funding terrorism is backed by various techniques that the jihadists employ to obtain the funds needed to carry out their operations. These stages can interconnect, and there is no set formula that they follow. Instead, they strive to disseminate their financing information in several locations to evade detection. Additionally, terrorists depend on building strong connections with other extremist groups, often facilitated through cartels. Furthermore, foreign funds obtained from supporters who share their ideology also play a significant role.

4. ORGANIZATIONS` REACTIONS

Based on the Financial Action Task Force (FATF) investigation and collaboration with various international organizations dedicated to combating terrorism, including Executive Directorate of the Anti-Terrorism Committee (CTED), International Center for Counter-Terrorism (ICCT), Global Counterterrorism Forum (GCTF), efforts are being made to track and disrupt the financing of terrorist activities at their source.

The initiatives carried out by the organizations operating under the umbrella of anti-terrorism financing (ATF) endorse financial policies and measures in a coordinated and specialized framework that aims to prevent and disrupt suspected financing of terrorist activities. Furthermore, these measures follow a precise and rigorous path that begins with identifying the source of funding, verifying the intermediaries, as well as the ultimate recipients of the funds.

The global community reacted to the Islamic jihadists' appeal for financial support by implementing measures to curb their efforts to penetrate the financial system. To reinforce this notion, several counter arguments are presented.

Table 2. The reactions of international bodies to the jihadist appeal

JIHADISTS` STEP	ORGANIZATIONS` STEP
PLEADINGS	***PUBLIC AWARENESS AND EDUCATION*****:** raising public sensitivity about the risks associated with financing terrorism can enhance vigilance towards transactions and their recipients, particularly in the cases of donations made by non-governmental organizations and movements highlighted by the media.

FOUNDARISING	***REGULATORY BODY*****:** the implementation of specialized laws by regulatory bodies that enhance financial transparency, promote accurate reporting, and facilitate identification of individuals behind suspicious transactions is a critical step towards effective control and monitoring of financial flows. ***TOOLS FOR SURVEILLANCE AND ANALYSIS:*** financial institutions and governments have created tools to monitor, interpret and prevent suspicious financial transactions related to terrorist financing taking place within the system. ***ADVANCED TECHNOLOGIES*****:** the integration of cutting-edge technology, including Artificial Intelligence and Blockchain, can significantly contribute to the detection and prevention of terrorist financing. These technologies can monitor financial data, create jihadist user profiles, and intercept them using various tools: ● ***Artificial Intelligence (AI):*** can be used to analyze financial data and detect patterns that may indicate terrorist financing, allowing for quicker and more accurate identification of potential threats. ● ***Blockchain*****:** Blockchain's decentralized ledger system allows for the recording and tracking of transactions in a secure and transparent manner. This technology can be used to detect suspicious financial activity and monitor the movement of funds in real-time, making it more difficult for terrorists to use the financial system to their advantage. ● ***Know Your Customer (KYC):*** the process of identifying and verifying the identities of potential clients before providing financial services. ● ***Suspicious Activity Reporting (SAR):*** a system of communication and cooperation between financial institutions and law enforcement agencies to report and investigate transactions or activities that are considered highly suspicious and may be associated with terrorist financing. ● ***Enhanced Due Diligence (EDD)****:* a technique used to analyze the behavior of clients, including their financial activities and connections, in order to minimize the risk of their involvement in terrorist financing. This is particularly crucial as some companies may inadvertently support such activities. ● ***Data Mining & Machine Learning algorithms*****:** to detect suspicious patterns in financial transactions. These algorithms can analyze large amounts of data and identify abnormal patterns that may indicate money laundering or terrorist financing. ● ***Big Data analytics***: it involves analyzing vast amounts of financial data to identify patterns and anomalies that may indicate potential terrorist financing activities.
LAUNDERING	***ADDRESSING OF CORRUPTION*****:** just as tax havens are known to harbor high levels of corruption, corruption, in turn, facilitates the financing of jihadist activities by providing funds and resources to terrorists who pass suspicious transactions through the underground networks of these nations. ***ADDRESSING OF CORRUPTION***: just as tax havens are known to harbor high levels of corruption, corruption, in turn, facilitates the financing of jihadist activities by providing funds and resources to terrorists who pass suspicious transactions through the underground networks of these nations.
TRANSFERING	***CRYPTOCURRENCIES` SURVEILLANCE*****:** with the emergence of new forms of currency that allow for nearly instantaneous transfers, controlling virtual currency transactions has become a top priority in the fight against terrorist financing. ***EMBARGOES*****:** governments apply punitive measures on individuals or entities

	suspected of financing terrorist activities by imposing restrictions on their financial assets, such as freezing their accounts. Additionally, governments create blacklists of high-risk countries, including tax havens or offshore centers, and exercise strict monitoring over transactions conducted within them by residents or non-residents.
MIDDLEMEN	***ADDRESSING OF CORRUPTION***: just as tax havens are known to harbor high levels of corruption, corruption, in turn, facilitates the financing of jihadist activities by providing funds and resources to terrorists who pass suspicious transactions through the underground networks of these nations.
EXCHANGING	***GLOBAL ALLIANCES***: ensuring the exchange of information, technical aid, judicial collaboration, and the extradition of criminals between states and international organizations is crucial for effective cooperation.

Source: Author's processing, combing with data from the reports of FATF

The core message of these reactions is that the anti-terrorist financing organizations continuously adapt their combat strategies based on the unique characteristics of each terrorist case. Nonetheless, detecting unreliable or suspicious data remains a challenge, which can hinder institutions from stopping the terrorist groups' plans in time. Nevertheless, these organizations continue their research and cooperation, aiming to create a framework to prevent terrorist activity with the help of advanced technology. To achieve this, tax havens must be closely monitored, and any underground activity must be discovered to reduce money laundering and corruption.

5. PROFILING TERRORISM IN TAX HAVENS

After the concatenating of the terrorist groups with the institutional groups, the first step is to create a profile of the financier behind the terrorist activity. By tracing the path of terrorist organizations, a general profile of the terrorist financier can be outlined, though not with exact precision, by identifying certain characteristics that are commonly shared among financiers: enormous amounts of money flow through their hands and are channeled towards the attainment of extremist goals, their motivation stems from various factors such as ideology, religious or political affiliation, desire for financial gain or power and they are dispersed across several key geographical locations and multiple terrorist affiliations, making it easier for them to evade detection.

Notwithstanding, there are some techniques by which responsible authorities and organizations can identify and profile terrorist investors. Via examination of financial information in a comprehensive manner to detect any potential suspicious transactions, monitoring online activities to uncover any affiliations with other extremist groups and fostering close cooperation between authorities through the exchange of national and international information, one can determine terrorist financiers and create their profiles. Additionally, studying the operations of jihadist activities can provide insight into their modus operandi.

The most impactful jihadist attacks were linked to the transit through OFCs. Below is highlighted the route of these terrorist activities and their way of spinning the money:

- *The terrorist attacks of September 11, 2001:* reportedly, the planning and financing of the attacks were carried out via a convoluted financial network that spanned several tax havens worldwide. Offshore bank accounts, companies and foundations located in jurisdictions like the Bahamas, Cayman Islands, Dubai and Switzerland were reportedly involved in moving significant amounts of money for the purpose of facilitating the attacks. To conceal the flow of money and fund their operations, the terrorists who belonged to the al-Qaeda organization resorted to multiple tactics. These included routing money through companies with vague or unknown titles, transferring funds between various accounts and procuring funds with the help of investors from Saudi Arabia (Jimmy, 2008).

- *The terrorist attacks of November 13, 2015, in Paris:* one notable instance involves an offshore corporation named `Alma Shalabayeva LTD`, which transferred more than 2 million euros to another offshore firm called `The Tiger and The Bear`. The latter was employed to fund the attacks. It is believed that `Alma Shalabayeva LTD` was incorporated in Seychelles and administered by an individual from Kazakhstan. In addition, the extremist network members implemented the strategy of utilizing prepaid bank cards, which can be purchased without the need to identify the owner, to fund themselves. These cards are often issued through off-shore companies, thereby ensuring the transfer of funds across the globe (Swedish Defence University, 2015).
- *The terrorist attacks in Mumbai, 2008:* the primary source of funding was traced to bank accounts and companies registered in offshore financial centers. The extremists utilized bank accounts established in Panama and Hong Kong to transfer substantial amounts of money to India, which was then used to finance the planning and implementation of the attacks. Furthermore, reports suggest that the terrorists received financial support from Lashkar-e-Taiba, a Pakistan-based terrorist organization that purportedly received funding from tax havens (Michael & Moyara, 2013).

The three major terrorist attacks presented are just a few examples of the many extremist activities that have received support from offshore centers. The list of terrorist attacks is extensive and encompasses a wide range of activities that fall under sub-financing, terrorist organizational affiliations and fiscally decentralized areas. All of these compete to achieve the objectives of terrorism.

6. CONCLUSIONS

The core idea in the depiction of terrorist financing is that tax havens serve as a significant source of financial capital for terrorist organizations, due to their banking secrecy and inadequate anti-money laundering regulations. Furthermore, these offshore jurisdictions are frequently utilized to fund other unlawful pursuits, such as the trafficking of drugs or weapons. Preventing terrorist operations at the root appears to be a subject of great interest in an age of technological advancement that enables access to the shadowy realms of the economy.

Terrorist financing is the obscured and murky aspect of the global economy, often referred to as the black collar due to its clandestine and secretive nature. Despite research efforts, the true size and scope of this industry remain largely unknown, with other sources of terrorist funding shrouded in mystery and uncertainty.

Developing a profile of a terrorist financier requires resources from the authorities engaged in combating terrorism, as well as experts who analyze the behavior of the extremist. As terrorists continuously develop new strategies, agencies must respond with countermeasures, including the infiltration of spies into the extremist network. In this context, advanced technology plays a critical role, along with cross-border measures and the prohibition of suspicious transactions that attempt to evade scrutiny by moving to tax havens.

To close, the international organizations dedicated to combating terrorist financing have called for a united effort to create a framework that prevents, mitigates, or eliminates this phenomenon, but their efforts have had limited success. This is due, in part, to the fear that jihadist attacks impose on society, making it difficult to implement effective measures. Nevertheless, there is hope in the use of advanced technology to dismantle the machinery of terrorist groups. Although it may take time to develop and test complex mechanisms to combat these crimes, there is a glimmer of hope that progress can be made in eradicating the black collar of the global economy. In short, the fees incurred by terrorism are enormous. Initially, we will consider direct costs related to human casualties and property damage. However, the second approach involves indirect costs related to the political and economic networks created and supported by terrorist organizations. Moreover, terrorist resort to violence to achieve objectives that cannot be achieved by legal and democratic means, raising doubts about the effectiveness of democratic methods in preventing or combating terrorism. It therefore highlights the need for diverse and complex approaches to address this issue.

Acknowledging the diverse and manifold hurdles associated with effectively combating terrorist financing, the acceptance of norms dictates that, despite optimistic assumptions, the challenge of addressing these issues and shutting down the sources and channels of terrorist funding will likely persist as a significant agenda item in the War on Terrorism for several years. In addition, the economy provides a fertile ground for the development of illicit activities in the shadows.

Last, but not the least, the vulnerable aspects of the economy are often analyzed and discussed during crucial moments in human history, such as during times of war. In essence, the economic theory of terrorism can conclude by making a prototype of the behavior of jihadist Islamic organizations, these being coordinated by two aspects: money and religion, both meaning power; this being at the same time the trigger point of all the catastrophes that humanity has faced.

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