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Energy Resources of the Balkans with Perspectivies for Overcoming Economic Contrdictions

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ABSTRACT

The Balkan countries as a whole exist with numerous energy resources that represent a significant segment of their social environment. The energetics of each creation in the current global context mark the first-rate basis of their international position. The countries of the observed region, especially the Western Balkans objectively have small oil and gas capacities as essential drivers of economic development. This space is characterized by the permanent presence and competition of great powers in accordance with their strategic interests. Current planetary conflicts, especially the war in Ukraine, produce negative social connotations with major crisis trends. It is evident that the countries of the region invest respectable financial resources in order to improve their energy infrastructure. Therefore, European integration projects and concrete foreign investments are necessary postulates of existence and long-term prosperity.

Keywords
Energy resources; Balkans; USA; Russia; European Union

Introduction

The Balkans are important and interesting for the EU and the USA for two reasons. Firstly, for military and political reasons as a very important geostrategic area, secondly as the shortest route to the world's largest deposits of oil and natural gas. The second one is more important for the EU than for the USA, but for the USA it is important for the reason that this road leads not only to Russian sources of oil and gas, but also to the mouths of the Caspian region, the Caucasus region and Central Asia, and this is important for the USA because by securing of oil and gas from those areas, attempts are made to minimize Russian influence on Europe through oil and gas, supporting oil and gas projects that provide oil and natural gas that are not from Russian deposits, i.e. that are competitive with oil and gas projects that are essential for Russia to transport to Europe as the largest consumer of Russian oil and gas. The Balkans are also interesting for Russia, for two very important reasons. First, the Balkans is very important as a transit area, as the shortest route for Russian oil and natural gas to the European market, to ports and oil terminals in the Mediterranean, and from them to the further Western world. That is why Russian oil and gas companies under the auspices of Russia want to include as many Balkan countries as possible in their oil and gas projects, which are of vital importance for both. Second, after the Cold War and the collapse of the Soviet Union, Russia lost its once great influence in the Balkans. Now he wants to return that influence. She realized that the easiest way to do this would be through oil and natural gas, through oil and gas companies.

Oil and gas companies from Russia very quickly conquered the Balkans, through oil and gas. In a very short time, in the last decade, Russian gas and oil companies have bought all the largest oil and gas companies, oil refineries, oil terminals, oil and derivatives warehouses and most of the sales facilities or put them under their influence, without asking for a price. This is how it came to be that all the countries of the Balkans fell under the energy influence of Russia through their oil and gas companies. The energy security of the Balkan countries depends on Russia from Russian gas and oil. There is no country in the Balkans that does not provide at least 50% of its energy needs from Russia, some even 100%, some over 80%. That is why the Balkans are important for Russia as a market and consumer of Russian oil and gas. In all of this, the Republic of Serbia takes its place, as an energy-dependent country and that of Russian oil and gas.

Methodology

Energy resources represent a conglomerate of natural resources that are of essential importance for energy security and the existential functioning of every country. It is a fact that the Balkan region disposes of huge quantities of various goods of almost all categories, which has always

been of particular interest to the great powers. Therefore, this space is the scene of permanent conflicts with implications for their social development. The subject of our research is the phenomenon of energy resources in the Balkan region with possible perspectives for the economic development of the countries in the observed territory.

The aim of the work is a scientific consideration of the availability and application of energy resources in the Balkans. Also, pointing out the importance of current segments for achieving stable economic development of the country. The basic hypothesis is: Energy resources play a first-class role in the development and prospects of the countries of the Balkan region. Auxiliary hypotheses are:

1. The area of the Balkans has huge amounts of different energy sources;
2. Existing energy potentials with optimal use can provide perspective development of certain creations.

During the research, known scientific methods and techniques will be implemented. Methods of analysis and synthesis of relevant literature content, descriptive method, comparative, specialization and generalization of selected materials will be used. The scientific justification of the work is reflected in the contribution to the academic community from an area that is not sufficiently researched. The social justification of the text means analyzing the topics of energy resources that are of first-class importance for every community. This is especially pronounced in the current situation caused by the war in Ukraine, which produced major crisis trends.

Discussion

Energy Resources and Perspectives of the Balkan Countries

The Balkan countries cannot boast of a wealth of energy sources. Oil and natural gas reserves are rarely found in the Balkan countries, so the need for these energy sources is mostly covered by imports. However, the geographical position of the Balkans is outstanding for the purpose of transporting energy sources from the Caspian region, Central Asia and the Middle East to the EU market.

There are no proven reserves of oil and natural gas in Montenegro, Macedonia and Kosovo, so neither Kosovo nor Montenegro have gas or oil pipelines. On the other hand, in the SFRY, the use of natural gas was reduced to a minimum, while electricity was used to the maximum, so that in some former countries of the SFRY, such as BiH and Macedonia, even to this day, gas pipeline networks are not sufficiently developed.

The energy crisis, which has been happening between Russia and Ukraine in recent years, has influenced many Balkan countries to start looking for alternative sources of gas. Except for Albania, all Balkan countries have connections with Russia when it comes to the natural gas network. In the medium term, countries in the region have begun initiatives to connect national gas pipeline networks, while in the long term, almost every country hopes to one day benefit from the natural gas of the Caspian region, Central Asia and the Middle East.

The energy sector of the Balkans follows European trends - consumption in the region is also expected to grow, mainly due to economic growth. In this environment, many aspects of the energy sector of the Balkans are not yet clear. The countries of the region must comply with European conditions and, at the same time, ensure their energy balance. This could only happen if there are new investments in energy infrastructure.

Coal is a very important energy resource for the Balkans, as it is available in sufficient quantities, especially on the territory of Serbia. There is mostly lignite, especially in the area of Kosovo and

Metohija. Considering the low calorific value of lignite, it is mostly used for the production of electricity in thermal power plants. Thermal energy from coal is currently the most dominant primary source of electricity in the Balkans, because from the aspect of the amount of energy they produce and the operational incremental costs of production, they directly affect the formation of the price of electricity on the Balkan regional electricity market. The current state of thermal power plants in terms of ecology is very dramatic.

Almost all thermal power plants in the Balkan region work on ecologically unacceptable grounds, as well as with a reduced energy efficiency factor. Those thermal power plants need environmental rehabilitation, so some of them will experience an increase in size, an increase in energy efficiency, elimination of environmental problems, while some of them will be shut down. Thermal power plants in the Balkans produce about 160 TWh of electricity, which represents about 60% of the total electricity produced. The country with the highest percentage of electricity produced from thermal power plants is Greece. Greece produces as much as 90% of its total production from thermal power plants (Anderson, 2020). Hungary is the next largest producer of electricity in thermal power plants; it is the first in the conversion of old thermal power plants into thermal power plants powered by biomass. Characteristic of Greece and Hungary is their open electricity market, especially in Hungary. The open electricity market may be the main force driving so much investment in these two countries, compared to others.

Recent information that Bosnia and Herzegovina lies on oil has again initiated the search for deposits. Research shows that large reserves are hidden in the area of Mostar, Stolac, Nevesinje and Gacko. A lot of money is invested especially in oil and gas exploration. It is estimated that there is oil in those areas for the next 50 years to satisfy internal needs.

Balkan countries dream of oil riches. Balkan countries have high hopes for an oil boom, which they say could bring much-needed cash flow and reduce the region's reliance on imports. Albania rejoiced at the recent discovery of large deposits in its territorial waters in the Adriatic Sea, which could yield a billion barrels of oil. Such announcements have some dreaming of new riches for the Balkan states, which have traditionally struggled with high unemployment and limited economic prospects. Albania is one of the few countries in the region and Europe where huge reserves of oil and natural gas have been discovered in the last century.

Results

Many experts in the field of energy emphasize the fact that citizens in the Balkan region, due to insufficient investment in the energy sector, are threatened with darkness in the coming years, and due to the lack of energy - stagnation in economic development. They recommend building new capacities as soon as possible. According to the latest study by the World Bank, one of the ways to reduce the energy uncertainty of the Balkans is the construction of regional and main gas pipelines, as well as the expansion of the distribution network in the countries of the Balkans. Energy security in the Balkan region is very uncertain.

Oil reserves in the Balkans in 2009 amounted to 981 million barrels, 61% of these reserves were located in Romania, 20% in Albania, 8% in Croatia and the remaining part in other countries of the region. (Anderson, 2010)

Natural gas reserves in the Balkans amount to 156.1 billion cubic meters, of which 40% are in Romania, 31% in Serbia, 23% in Croatia, and the rest is in other Balkan countries. As can be noted, Romania is the richest country in the region in oil and natural gas reserves. With the influence and

surface size of this country, Romania is the country that has the longest network of oil and gas pipelines in the region. (Anderson, 2020)

In Republika Srpska, four potential sites stand out, two in Posavina and one each in the area of Lopar and Tuzla. Potential reserves amount to almost 300 million tons, and proven reserves based on previous research are 50 million barrels. Experts say that the oil is at a depth of 2,000 to 6,000 meters. According to the current stock market price, that oil is worth about thirty billion dollars. In Bosnia and Herzegovina, they are seriously working on the continuation of research, which the world's oil companies are interested in.

Research at new locations has also begun in our country. Images of oil fields could become a reality and a common image in one year, both in Bosnia and Herzegovina and in Serbia. During the last decade of the last century, American and British companies investigated whether there is oil and gas in the territory of Bosnia and Herzegovina. The war interrupted this work, but the results remained. On the territory of Bosnia and Herzegovina, numerous researches were conducted and around 70 potential sites were located.

The oil industry of Serbia conducts research in Serbia, there are also reserves that have not yet been used south of the Sava and Danube. In Serbia, the extraction of oil shale in the Aleksinac mining basin is a strategic decision for the future of Serbia. Aleksinac would meet 10 to 15 percent of Serbia's oil needs, which would reduce its dependence on imports.

The Slovenian government is seriously considering increasing the capacity of the Krško nuclear power plant by an additional 1,000 MW, as the country currently lacks 400 to 500 MW of new electricity generation capacity. However, if Slovenia decides to build a new nuclear plant, it must, among other things, count on the opposition of Austria, which will not allow the construction of new nuclear power plants in neighboring countries.

Also, Croatia is considering the option of building a nuclear power plant, because a nuclear power plant is a necessity, because it is the only way to produce energy economically and environmentally friendly. The price of oil is rising, supplies are decreasing, and Croatia, if it wants to join the EU, must ratify the Kyoto Protocol and reduce carbon dioxide emissions, which means it must find new sources of energy. The sun, wind and biomass, as renewable sources of energy, are expensive and therefore nuclear energy is the only acceptable and safe source of energy.

Gasification in gas power plants is also being considered, as an alternative to the aforementioned nuclear plants, as well as the possibility of building a new gas pipeline between Russia and Italy, which would pass through Slovenian territory. This should be understood as Russia's confirmation of the main supplier of gas to the countries of Central and Southeastern Europe. Also, the Croatian company "Gasakro" plans to raise its own gas pipeline system to a higher level in the next five years and enable BiH, Montenegro and Albania to connect to the Croatian gas pipeline network. Of the Balkan countries, only Bulgaria has openly declared that it will continue with the construction of the "Belane" nuclear power plant, which will meet its long-term needs. Macedonia is planning accelerated gasification of the country and creation of new hydro potential, with the support of the World Bank. As far as Montenegro is concerned, the possibility of intensifying research and investing in renewable energy sources is being considered, given that hydro potential, biomass, and solar and wind energy are the most important in that country. The total hydropower potential of Montenegro is about 11 billion KWh per year, of which 17% has been used so far. Republika Srpska sees its future in large and small hydropower plants, but also in the "Stanare" thermal power plant, which should be built by EFT (Radoman, 2007).

With its establishment, the Energy Community of Southeast Europe created a unique energy market, the area of which covers a territory slightly larger than France, and with fifty-five million

inhabitants it is equal to the size of the Italian market. Considering the insufficiently developed infrastructure and the forecast growth in the consumption of all types of energy, especially electricity, the area of Southeastern Europe is becoming more and more interesting to investors, due to above-average growth rates. The estimated value of the electricity market in Europe in 2005 was 244.4 billion euros, with a forecast average annual consumption growth of 1.4%.

At the same time, in Southeast Europe, according to the results of the World Bank study, an average annual consumption growth rate of 2.3% is expected until 2022. The current operational capacities for the production of electricity in Southeast Europe amount to about 43.9 GW, which represents slightly more than 5% of the total European capacities. The structure is dominated by thermal capacities, which use lignite. Observed by periods, the greatest investment activity is expected in the period from 2012 to 2022, when as much as a quarter of all new capacities in Europe will be built in the region of Southeast Europe.

However, the construction of new capacities will not be equally distributed over the entire region, because in some countries the priority will be the rehabilitation of existing ones. It is expected that Albania will remain a net importer of electricity in the coming period as well; in Bosnia and Herzegovina, the construction of 400 MW of hydro capacity is expected, but the priority still remains on the rehabilitation of the system; in Bulgaria, 2,400 MW of new capacities are expected, along with the rehabilitation of existing ones; Croatia plans to build 2,000 MW of new capacity, although a timetable for implementation has not yet been adopted; in Romania, the rehabilitation of 8,000 MW of thermal capacity is expected, while in Serbia, a significant expansion of capacity is expected only after 2012. The most significant current issue in the region is the impact of the closure of the "Kozloduy" NPP in Bulgaria on the energy situation in Southeast Europe. With the closure of this nuclear power plant, a significant part of the production capacity will "disappear", which will have a negative impact not only on Bulgaria, but also on the surrounding countries - in the form of great pressure and a possible sudden jump in the price of electricity in Southeast Europe. Bulgaria has traditionally exported electricity to Greece, Serbia, Macedonia and Romania, meeting a significant part of consumption in these markets. Bulgaria is currently the largest exporter of electricity in the Balkans and the fourth largest exporter in Europe.

In the last few years, investments in the development and modernization of energy plants and infrastructure have been evident throughout the entire territory of the Balkans, which speaks of the importance of energy as a strategically important product and the Balkan area in the field of energy. It is necessary to invest about 10.5 billion euros in the development of energy infrastructure in Serbia by 2020, and investments of up to 240 billion euros are expected in the region. The Regional Energy Institute conducted a study on the development of the regional energy market. In this sector, the countries of the region are highly dependent on imported oil and gas. Therefore, energy connection is necessary, as is the development of regional infrastructure (Savković, 2007). The region needs more gas and oil pipelines for the sake of energy security, and connection in the electrical energy sector will become one of the primary goals by 2020. The biggest challenges facing the countries of Southeast Europe are: high dependence on oil and gas imports, low level of diversification of energy sources and insufficient production of energy from renewable sources. In some countries, the production of electricity from renewable sources has increased, but other countries should follow suit. Coal consumption has decreased in the region, with a constant increase in oil consumption, and the jump in the price of this energy will increasingly affect the overall economy of the Balkan countries. Therefore, strengthening the energy infrastructure and connecting it is one of the solutions for a good energy supply. Investments in Serbia will include the construction of gas infrastructure, modernization of refineries, construction of power plants for

the production of electricity, as well as investments of around 600 million euros in renewable energy sources. Of the planned 240 billion euros, which is required to be invested in the energy sector of the region, it is planned to invest about 55 billion euros in the oil sector, about 90 billion in the field of electric energy, 24 billion in the field of gas and about 20 billion in renewable sources (Savković, 2007).

The European perspective of the Balkan countries is the main factor in the development of their energy sector. The region is located in the middle of routes that connect energy suppliers (Russia, the countries of the Caucasus and the Middle East) with large energy consumers of Central and Western Europe. At the same time, the region itself is increasing its energy consumption. The energy "crossroads" can greatly benefit the countries of Southeast Europe, in terms of new investments in energy capacities and energy infrastructure.

Great world powers have always demonstrated a strategic interest in controlling the area in question, which has been called the region of Southeast Europe since 1992. At the same time, its narrower part (subregion) is called the Western Balkans in the geopolitical discourse, which includes Serbia, Bosnia and Herzegovina, North Macedonia, Albania and Montenegro. Hegemons with their geopolitical, geosecurity and energy policies directly or indirectly manifest different paradigms of influence on the Balkans, where we prioritize the role of the Russian Federation, the United States of America and the European Union. Their positioning produces evident, direct repercussions on the economic condition and development of individual countries. Full member states of the EU undoubtedly receive numerous jurisdictions and financial support, which implies a more favorable economic status. Therefore, the determination of other creations towards European integration is essential.

The energy policy of the Russian Federation, that is, Russia, is contained in the Energy Strategy document, which defines its policy for the period up to 2020. The economic effects of the mentioned concept are reflected in the huge profit from the sale of energy products. In 2000, the Russian Government approved the main provisions of the Russian energy strategy until 2020, and in 2003 it was confirmed by the Government. The energy strategy highlights several main priorities: increasing energy efficiency, reducing the impact on the environment and sustainable development and development of energy and technological development, as well as improved efficiency and competitiveness. The Russian Federation is one of the world's two energy superpowers, rich in natural energy sources. That country is an energy superpower, because it has the largest known natural gas reserves of any country in the world, for about 50 years, the second largest coal reserves in the world, eighth in the world in terms of oil reserves, and fourth in the world in terms of electricity production, after the USA , China and Japan. Russia exports about 7 million barrels of oil per day, and the entire Middle East, by comparison, exports 20 million barrels per day. It is the largest supplier of natural gas to the EU (Simurdić, 2009).

Alternative, i.e. renewable energy sources in Russia are mostly represented by hydropower. Geothermal energy, used for heating and electricity generation in some parts of the North Caucasus and the Far East, is the most developed alternative energy source in Russia. Of the non-renewable energy sources in Russia, natural gas is the most common. In the last few years, that country has identified the natural gas sector as a sector of strategic importance and vital national interest. The share of natural gas as a basic energy source is extremely high compared to the rest of the world. Natural gas capacities are mostly under the monopoly of Gazprom, which produces 94% of Russian natural gas production. In the global context, Gazprom has 25% of the world's known gas reserves and produces about 16% of global production. In 2006, Russia was the world's largest

producer of natural gas with 22.0% of world production and the largest exporter with 22.9% of global natural gas exports (Petrović, 2007).

The main export markets for Russian natural gas are the European Union and the CIS. Russia supplies a quarter of Europe's gas consumption, mainly via transit through Ukraine (Soyuz, Bratstvo) and Belarus (Yamal - Europe gas pipeline). The main importers are Germany, as well as Ukraine, Belarus, Italy, Turkey, France and Hungary.

Russia is the largest oil producer in non-OPEC countries, and the second largest in the world after Saudi Arabia. In 2006, Russia accounted for 12.1% of global oil production and 11.6% of global oil exports. Russia is also the main transit country for oil from Kazakhstan. Russia has been conducting research under the Arctic ice, which is believed to contain reserves of 10 trillion tons of oil and gas, and has submitted a request to the UN Boundary Commission to move its borders beyond the previous 200-mile zone within the Arctic Russian sector (December 20, 2001 year) (Petrović, 2007). With 157 billion tons of coal reserves, Russia is second in the world. Russia's coal reserves are widely decentralized. The main deposit of hard coal is located in the Pekhora and Kuznets basins. The Kanc-Akhinc basin contains large deposits of brown coal. The Siberian Lena and Tunguska basins constitute largely unexplored resources. Russia has the largest oil shale reserves in Europe, the reserves amount to 35.47 billion tons of oil shale. More than 80% of oil shale reserves have been identified. Uranium exploration and development activities are mainly concentrated in three locations east of the Urals. Russia is the fourth largest producer of uranium, producing 8.2% of global production.

Russia is the fourth largest producer of electricity in the world after the USA, China and Japan. About 63% of Russia's electricity is produced in thermal power plants, 21% comes from hydropower and 16% comes from nuclear reactors. Russia exports electricity to the CIS countries, Latvia, Lithuania, China, Poland, Turkey and Finland. While production and sales are open to competition, transmission and distribution are under state control. Regarding the structure of Russian energy consumption, domestic production largely exceeds domestic needs, which is why Russia is the world's leading net exporter of energy (Simurdić, 2009).

Russia's status as an energy superpower has recently become a hot topic in the European Union. Mostly large reserves of natural gas helped it get that title without much debate. Russia was recently accused in the West, i.e. Europe and the USA, to use their natural resources as policy instruments. On the other hand, Russian officials want to remind their Western partners that even at the height of the Cold War, the Soviet Union never cut off energy supplies to the West.

The energy policy of the United States of America is determined by federal, state, and local legislation that deals with issues of energy production, distribution, and consumption. Three energy policies in the form of Laws were adopted in 1992, 2005, and 2007, which include many provisions for energy conservation and energy development, with grants and tax incentives for renewable and non-renewable energies.

Coal provided the majority of US energy needs in the 20th century. Soon the primacy of coal was taken over by oil. By 1950, oil consumption exceeded coal consumption. Coal is still far cheaper than oil. The greatest use of oil came with the development of the automobile. US oil reserves and production increased until 1970 and then began to decline. By 2005, imports were twice as large as production. The abundance of oil in California, Texas, Oklahoma as well as Canada and Mexico, combined with low costs, ease of transportation, and the use of internal combustion engines, led to increased oil consumption. The demand for oil in America was growing rapidly. That is why the import of oil has increased sharply, American foreign policy is inevitably drawn into the Middle East, where there are huge reserves of fossil fuels that it needs for further sustainable

economic development. Lessons learned from the 1973 oil crisis, the federal energy law of 1978 introduced mandatory strategic oil reserves, gave more importance to alternative energy sources, and took measures to plan energy supply from multiple and mutually independent sources.

In the USA, in various ways, they are trying to find a solution to reduce energy consumption, because due to economic development, the increase in the standard of living, consumption is increasing from year to year, and they are aware that energy from fossil fuels is energy from limited resources, which are increasingly consumed and supplies are less and less, they are also aware of what can happen when there is a sudden drop in fossil fuel production and in the meantime no satisfactory alternative solutions are found. Because of the above, solutions are being proposed in the USA to reduce the use of fossil fuel cars, that is, to increase the use of electric cars, so that 20% of energy is obtained from biofuels and 20% from solar energy. In the USA, measures are being taken to increase the efficiency of energy use and reduce consumption. That is why more and more money is allocated from the budget for research and development related to renewable energy. As can be seen from the above, the USA is energy dependent on imports, so they are forced to find the best solutions for reliable and safe energy supply through their energy policy, to reduce their energy dependence on imports, i.e. to increase their energy security , especially regarding the supply of oil and natural gas.

The European Union must solve important challenges, such as the increasing dependence on energy imports, which leads to a continuous increase in energy costs. In response to these challenges, the EU tried to solve by adopting the Energy Policy Action Plan for Europe (EPE) from 2007.

Through the Action Plan, it was concluded that we must strive for: greater security of supply; ensuring the competitiveness of European economies and the availability of affordable energy and promoting environmental sustainability and the fight against climate change. The increase in energy efficiency and the use of renewable sources will increase the security of energy supply by causing a drop in projected consumption, keeping prices stable (higher availability and lower demand) and reducing harmful gas emissions.

European energy policies will firmly commit the European Union to a low consumption, economy based on safer, more competitive and sustainable energy. Priority energy goals include ensuring the smooth functioning of the internal energy market, security of supply, reduction of harmful gas emissions due to energy production or consumption, and the ability of the EU to have a unique position on the international stage. The document "Energy Policy for Europe" was adopted by the European Parliament on January 10, 2007. This document is a strategic overview of the European energy situation, it represents a complete set of European energy policy measures.

The European energy policy is recognized as the most effective response to the energy challenges faced by all member states. The European Union is trying to establish a single internal energy market and it would be developed at Community level, to ensure that consumers have the opportunity to choose a supplier, with fair and competitive prices. However, as pointed out in the Information on the prospects of the internal energy market and strict competition in the gas and electricity sector, there are obstacles that prevent the economy and European consumers from fully taking advantage of the opening of the gas and electricity markets. Ensuring an effective internal energy market would be crucial. One of the goals of the EU energy policy is to create a competitive market. The internal energy market essentially depends on cross-border energy trade. However, such trade is often difficult due to disparities between national technical standards and differences in network capacities. The goal of the EU is to create a unique European energy network. The Priority Interconnection Plan emphasizes the importance of financial and political support for the

implementation of infrastructure, which have been identified as essential, and the proposal of European coordinators for monitoring the most problematic priority projects. With its energy policy, the European Union is determined to persevere in its fight against energy poverty by developing a charter of energy buyers. The charter will primarily encourage the implementation of aid programs for the most vulnerable citizens in the event of rising energy prices, as well as improving the level of consumer information about the existence of various suppliers and supply options.

One of the main objectives of the EU policy is to ensure a safe and reliable energy supply. Minimizing the EU's vulnerability to imports, supply shortfalls, possible energy crises and uncertainty about future supply is a clear priority. This uncertainty is increasingly problematic for member states that depend on a single gas supplier. One of the key goals of the EU's energy policy is to reduce emissions of harmful gases, committing to reduce its own emissions by at least 20 percent by 2022. Reducing greenhouse gas emissions involves using less energy and using more clean energy.

The European Union is not able to achieve the goal of secure, competitive and sustainable energy on its own. In order to do this, it requires the engagement and cooperation of both developed and developing countries, energy consumers and producers, and transit countries. In order to ensure efficiency and coherence, it is crucial that Member States and the EU are able to have a single position on international energy issues. The EU's relations with consumer countries (such as the USA, India, Brazil and China) and producer countries (Russia, Norway, OPEC countries and Algeria, for example) and transit countries (such as Ukraine) are of primary importance from the aspect of geopolitical security. and economic stability. The European Union will therefore strive to develop transparent, predictable and reciprocal energy partnerships with these countries, especially with neighboring countries. The European Union is committed to helping developing countries implement decentralized energy services that are cheap, reliable and sustainable.

Conclusion

To ensure the economic development of every country, energy is of prime importance. It has become strategically extremely important, especially for economically developed countries and world hegemons. The world's leading states could not exert all their power without energy, because all military modern technology would be unusable without energy. That is why energy is especially important for the great powers and they will use all their power to ensure that energy is always available to them in sufficient quantities and under the most favorable and safe supply conditions. The region of Southeast Europe, i.e. the Balkans as a geostrategically important planetary area, represents the cradle of Europe in its cultural, historical and civilizational development. From a geographical and geostrategic point of view, the Balkans represent the "geopolitical hub" of East and West, the great door to the east and west, north and south of Europe, the "chains of the world", as some of our famous geographers would say. The Balkans are not rich in energy sources. Oil and natural gas reserves are rarely found in the Balkan countries, so the need for these energy sources is mostly covered by imports. However, the geographical position of the Balkans is outstanding for the purpose of transporting energy raw materials from energy sources in the Caspian region, Central Asia, the Middle East and Russia to the EU market.

We look at the energy policy of the major powers in the Balkans in the context of their overall influence on this region. For them, the energy policy in the Balkans is a part of the general energy policy in Europe and global policy, and at the same time it is a means to realize the overall interests

in the region of Southeast Europe and the European Union. Therefore, the energy policy in the Balkans is not an isolated conglomerate of determinations and strategies of great powers exclusively towards the Balkans, but part of the doctrine of the world masters with permanent implications for the wider environment of Asia and Africa. Is this way, the set hypotheses were proven and the scientific and social justification of research on the current topic was confirmed.

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USE OF VIDEO ANALYTICS IN SECURITY SYSTEMS FOR CRIME PREVENTION AND EVIDENCE COLLECTION

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Entry

Video has always been an essential element for law enforcement agencies in maintaining and promoting public safety. From local police to elite specialized units, law enforcement agencies around the world rely on video surveillance to gather operational information and evidence needed to maintain order, protect citizens and enhance security, whether within a neighborhood or at state borders.

Although law enforcement agencies rely heavily on video surveillance, it is not always the most practical method. First, it is difficult to watch *live* video recordings. Any person charged with this task would be prone to distraction and error. Critical details can be overlooked if they do not pay full attention to the Video Management System (*VMS*) or recordings. Even if the person is fully focused, it is easy to miss important objects that appear, especially if there is a lot of activity in the area being recorded.

Apart *live video* viewing , video surveillance can also be used as supporting evidence in criminal investigations of incidents. Even this analysis does not escape from mistakes and lack of human attention, besides it takes a lot of time. Public and private spaces are monitored by multiple cameras, designed to cover every corner of the space. When records need to be checked, law enforcement agents must go through hours of records from several sources. Usually, it is impossible and ineffective to see all the records, so it is necessary to create a priority queue and set time limits for the completion of the work. Basically, it turns into a battle between the need to see all the evidence and the human resources needed for other investigations as well.

These needs of law enforcement agencies have given birth to Video *Content Analytics* (VCA). This paper will discuss how Video Content Analysis can be used to prevent crime and enable law enforcement and security agencies to overcome the challenges of video surveillance and utilize the full technological potential for productive video review and extracting predictive analytics from video content.

What is artificial intelligence, how was it born and how did it develop?

Artificial intelligence (in English, *artificial intelligence* - AI) is a discipline that belongs to computer science and that studies the theoretical foundations, methodologies and techniques that allow the design of hardware systems and software systems that allow a computer to perform functions that, to the eye of an average observer , would seem to belong exclusively to human intelligence.

The above definition belongs to Professor Marko Somalviko [1], an eminent Italian engineer, specialized in the field of artificial intelligence, winner of the Joseph Engelberger International Prize for Robotics. With this brief description, it is possible to understand the essence of this discipline, which has been born and developed for years, but only recently has received wide recognition.

Artificial intelligence aims to mimic the human brain, which is based on neural networks or communities of closely interconnected neurons that change their configuration in response to external stimuli. In this sense, the brain has a learning function, and artificial models try to imitate this distinctive characteristic of it.

[1] Somalvico , Marco, *Intelligenza artificial* , in *Encyclopedia italiana di scienze letters and art* , Rome, Istituto vein Encyclopedia Italiana , 1991, Appendix V, pp. 735-738.

In the field of machine learning (*Machine Learning*), an artificial neural network (in English, *artificial neural network* - ANN) is a computational model composed of artificial *"neurons"* , inspired by a simplified model of a biological neural network .

The artificial neural network can be built from software programs, but also from dedicated hardware (*Digital Signal Processing* or DSP). As early as 1943, scientists McSallow and Pitts [2]gave *"life"* to the first theoretical model of a simple artificial neuron. They describe an apparatus capable of receiving an *n number of* binary data [3]inputs to each of its elements, followed by a single output data for each. Such an apparatus is able to work with elementary Boolean functions [4]. In 1949, Heb [5], for the first time in history, raised the hypothesis of the possibility of instructing machines to learn in a manner similar to the way human intelligence learns.

This became a reality in 1958 by the hand of Frank Rosenblatt [6], the American psychologist who created the Perceptron, the first neural network based on the model of automated learning with a layer of input nodes (artificial neurons) and an output node. This model is *feedforward* , i.e. it is characterized by impulses that propagate in a single direction: forward. It deals with shape recognition, classifying them into two separate groups, and calculating simple functions. This, then, was a neural network with a limited scope.

With the birth of the *Multi Layer Perceptron* (MLP), this network became more complex. Inside it, between the input and output nodes, there is a hidden layer, where the information coming from the input layer is processed, which is then sent to the output node. It is a non-linear *feedforward* network : the input and output connections from each node are multiple. Thanks to this architecture, MLP can compute any function.

In 1986, starting from Werbo's thesis [7]on how the learning parameters of MLP can be established and thanks to the contribution of David Rumelhart, Jeffrey Hinton and Ronald Williams [8], the famous Error-Back Propagation was elaborated [9].

With the backpropagation algorithm we enter the present, because it is still used today. EBP allows to improve successive stages of automated learning of a neural network, until they take it to the level of deep learning. We are talking, therefore, about *Deep Learning.*

Deep Learning

Deep Learning is that field of research on machine learning (*Machine Learning*) and on artificial intelligence, which is based on different levels of representation, corresponding to hierarchies of characteristics of factors or concepts, where high-level concepts are defined on base of low level ones. In other words [10], *Deep Learning* refers to a set of techniques based on artificial neural networks organized in different layers, where each layer calculates the values for the next layer, so that the information is always processed in a more complete way.

[2]Warren S. McCulloch, Walter H. Pitt's and the article The their : *"A Logical Calculus of the Ideas Immanent in Nervous Activity".*
[3] Number beam IS A number The EXPRESS IN SySTEm binary number , that is IN his method _ EXPRESSION MATHEMATICAL THAT use only two symbols : 0 and 1. System binary number is used BY almost THE all computer AND based devices _ IN computers .
[4] Boolean algebra or The logic boolean IS A branch of algebra THAT USE ABOUT THE created STATEMENTS THE truth / of fake . Expressions boolean use AND, OR, XOR and NOT operators for THE compare values AND ABOUT THE LEARNED A RESULT THE really OR THE false .
[5]DO Hebb.
[6]Frank Rosenblatt.
[7]Paul John Werbos AND the article The his "Beyond Regression: New Tools for Prediction and Analysis in the Behavioral Science", 1974.
[8] David E. Rumelhart, Geoffrey E. Hinton, Ronald J. Williams.
[9]This is it A algorithm THAT use DESCENT gradual . IN A NETWORK artificial nerve and A function error , algorithm Calculate error rate _ IN relative to the weight of the network . calculation proceeds BACKWARD through network , starting BY error rate _ IN the last layers of going TO those THE the money .
[10] According to the definition of the Artificial Intelligence Observatory of the Polytechnic of Milan.

The learning algorithms used to train neural networks depend on the field of application for which the network is designed and the typology of the network itself (*feedforward* or *feedback*). In this sense, *Deep Learning* is a community of automated learning techniques, through which artificial neural networks are exposed to large amounts of data, so that they can learn to perform certain tasks through automatic learning algorithms.

Deep Learning systems allow, among other things, to transcribe speech into text, to individualize and interpret the interests of network users, etc. In the field of medicine, the most advanced clinical diagnostic software is based on *Deep Learning systems* . In the field of motoring, efforts for automated driving of cars have started since 1925. This field, more tangible for the general public, although still without complete success, widely uses Deep Learning in various technologies: *cameras* , [11]radars [12], external sensors [13], front laser scanner [14], GPS satellite system [15]. It is thought that fully automated cars will be in circulation within the year 2030. But what is important for this work, *Deep Learning systems* are precisely those that allow to analyze the content of images and videos, identifying the people and objects that appear. in them.

Artificial intelligence and video surveillance

Now that we have a clearer understanding of the concept of *Deep Learning* , we can enter more concretely into our topic and see how artificial intelligence is revolutionizing the video surveillance sector. Artificial intelligence and Deep Learning in this field appear in the form of video analysis or video content analysis.

The term *"video analysis"* refers to the ability of a camera surveillance (or video surveillance) system to analyze the content of recorded scenes and perform certain actions following the recording of a certain event that occurs in the recorded scene. or what happens after the evolution of the recorded scene. Thus, the video surveillance system that is equipped with video analysis not only records according to the modes defined in the system configurations, but, analyzing the content of the scenes in real time, is able to alert the operator of the control center about the occurrence of a event that may be dangerous or, at least, of interest. At this point, we want to take the opportunity to explain that video analysis is not an exclusive function of cameras, but is applied to many other video devices with security functions. In 2021, video analysis is found in cameras, network video recorders and related software, despite differences in analysis typology related to the type of technology or the characteristics of the manufacturing brand.

We'll start with the differences between video analytics, intelligent video analytics, and the latest developments in the field of video analytics. Everyone has heard talk, at least once in their life, about motion detection (in English, *motion detection*). It is about the class of algorithms that allow to detect the movement of an object within a video. These algorithms are applied almost exclusively in video surveillance systems and can have different levels of sensitivity in video stream analysis. These algorithms work on pixels.

The most common example is the one found in most cameras that have a video analysis function and that allows, during system configuration, to create a line beyond which any movement generates an alarm (usually a fence or siege). In more modern versions, there is an opportunity to create entire areas of interest.

The simplicity of the operation of this algorithm places it outside the category of intelligent systems. The difficulty of using it lies in the fact that it generates a lot of false positive alarms, since it is activated by any movement, even by a change in lighting. This has been one of the factors that has influenced distrust towards video analysis. Today this functionality is advised to be used mainly to set the recording in motion. So the cameras start recording when a movement is detected in the defined area and stop when the state of stability returns. In this way, it is avoided to record when nothing happens, which saves the storage capacity of the recorder. This makes it even easier to search the records if needed later.

[11]To distinguish the obstacles provided and the lane lines.
[12]They allow detailed 360° views around the car and lane changes, as they detect cars approaching from behind.
[13]Identify objects when the car is moving at low speed.
[14]It allows more detailed scanning of the road ahead of the car and distinguishing potential hazards.
[15]It allows the car to understand where it is and what is around it.

Video analysis became moderately intelligent with the introduction of vertical algorithms, capable of identifying certain movement characteristics, such as falls (Slip&Fall Detection), direction of movement (Direction Detection) and the trajectory of objects and persons (Auto Tracker), or analyze objects that do not move, such as the detection of abandoned objects (Object Left Detection) or removed (Asset Detection).

The real intelligence came when the analysis was able to distinguish who or what it was analyzing (mainly, as we will see below, the human face, the human body, and machines). This was achieved through neural networks, which we talked about above. Intelligent algorithms stop working on pixels and work on objects.

Manufacturers of smart video surveillance devices work on the basis of large libraries of neural networks created by companies such as Google, Nvidia and Facebook to create algorithms that are able to recognize only objects that are important for security (cars, people, animals , etc.). The special algorithms are necessary because the data, with which the aforementioned networks have been supplied, have been general and do not specifically refer to security situations.

Initially, the cameras were designed to detect people and cars within the scene they were recording, without the need to create a security line or perimeter.

Then perimeter security evolved, with the combined use of thermal cameras [16]and PTZ cameras [17]to guard the perimeter of facilities. Thermal cameras distinguish people or cars by detecting infrared rays. The thermal cameras transmit this signal to the PTZ cameras, which follow the detected target in a chain, keeping it in the field of view.

Thermal cameras find wide use in the preservation of critical sites and equipment. Since last year they are being widely used to control the spread of Covid 19, measuring the temperature of people at the entrance of airports, government and commercial buildings, schools, hospitals, etc.

In objects of special importance and increased security requirements, the industry practice is to guard the perimeter with thermal cameras, which transmit signals to PTZ cameras, while the entire territory is also monitored with radars, and the perimeter with perimeter protection systems. Both radars and perimeter defense signal the PTZ cameras to track the target.

The radars monitor the entire territory in volume and can be programmed to give an alert for persons or motorized vehicles [18].

Perimeter protection is carried out through fiber installed in the fence, which is activated by touch, or small radars located at the endpoints, which create a virtual perimeter line, the passage of which activates the alarm, or hydraulic systems installed underground, which are activated by the passage of persons or motorized vehicles over them. These systems are also integrated with PTZ cameras for active target tracking.

All of this is combined with the artificial intelligence functions that are built into fixed cameras, rolling cameras and all other types of specialized cameras. Additionally, camera surveillance systems can be integrated with fire and burglar alarm systems, access/exit control, perimeter protection, radars, GPS trackers, and any other imaginable security or automation system and function. of buildings. This integration can be done based on VMS or on neutral platforms [19], which have no brand or functionality restrictions. It is precisely the latter, as we will see below, that are opening new horizons in the field of video analytics.

Functions of video analytics nowadays

[16]A thermal imaging camera (infrared camera or thermal imaging camera) is a device that creates an image using infrared (IR) radiation, similar to a conventional camera that creates an image using visible light.
[17]PTZ stands for Pan-Tilt-Zoom (pan-tilt-zoom) and indicates that the camera is equipped with the function of moving in pursuit of the target or by command, as well as with the function of panoramic view and focus zoom.
[18]Radars can also be combined with GPS systems, so that authorized persons and vehicles equipped with GPS trackers can be recognized by the radar as *"friends"*.
[19]PSIM Platforms – Physical Security Information Management.

Currently, all major manufacturers of cameras, video recorders and VMS offer video analytics functions, which are based on artificial intelligence and *Deep Learning* . The cameras themselves have become more capable of distinguishing certain categories of objects.

On the other hand, the ability of video surveillance systems to analyze the content of the recording has evolved beyond the simple recognition of people or cars, as a general category. Today, video surveillance systems can be designed with many artificial intelligence functions, using *Deep Learning algorithms* built into recorders or VMS. These functions can be used during *live recording* to signal via alarms, but also to check the recordings at a later time, if this is necessary.

Video analytics uses metadata, which is attribute attribution information extracted from objects of interest that can be used for data collection. Currently, three main metadata are used in the security industry: human face, human body and machine metadata. Face metadata includes sex, age, glasses, masks, expressions, beard, etc. Body metadata includes T-shirts, pants, clothing colors, hair, backpacks, etc. Car metadata includes license plate, color, make, model, etc.

The metadata recognition function can be used to determine whether objects are present in the image or video. If objects are present, their position and dimensions are recorded, characteristics and model are extracted. The model is compared with those registered in the database and the system notifies if there is a match.

Below we list the functionalities that can currently be realized through video analysis:

- Classification of categories: person, two-wheeled vehicles, other vehicles, animals.
- Classification of persons: man, woman, child.
- Classification of two-wheeled vehicles: bicycles, motorcycles.
- Classification of vehicles: car, truck, van, minibus, bus, train, plane, boat.
- Vehicle changes: lights on, lights off.
- Person attributes: bottom clothing (length, color), top clothing (sleeves, color), hats, masks, shoulder bag, backpack.
- Color recognition.
- Identification of persons and means with similar attributes.
- Face recognition.
- Recognition of car license plates.
- Direction of movement.
- Passing on a certain route.
- Movement speed.
- Proximity.
- Dimensions.
- Area.
- Time of standing still.
- Movement of objects.
- Recreating the movements of a person or machine.
- Monitoring of personnel (movement or lack of movement).
- Smoke and fire detection (thermal cameras).
- Loud sound detection.
- Fisheye Dewarping (using Fisheye cameras [20]as panoramic and PTZ cameras).
- Heatmap (people/vehicle traffic map).
- Crowd monitoring.
- Counting people.

[20]*Fisheye* lenses are wide-angle lenses that produce a strong visual distortion that creates a wide panoramic or hemispherical image. These lenses achieve very wide viewing angles.

- Checking the filling of shelves [21].

The role of video analytics in crime prevention

When the system is designed in such a way, the above functions can be performed during *live video recordings* . This is the essential role video surveillance plays in crime prevention.

The advancement of technology is trying to expand the role of video analytics in crime prevention. The most advanced software not only performs object recognition based on metadata, but also analyzes and suggests the degree of risk of an object or action. This is accomplished through the simultaneous analysis of dimensional proportions, perspective and movements. For this purpose, certain manufacturers have performed *"custom training"* of the video analysis algorithm. These trainings mean creating specific situations related to video surveillance and exposing the algorithm to them hundreds of thousands of times, until the algorithm is able to generalize. Using these learning techniques, behavior analysis modules have been created, which distinguish potentially dangerous situations by detecting certain positions that the human body takes.

So far we described how video analytics is used to prevent crime in the context of a particular security system installed in a concrete facility. However, the same logic is used to create intelligence and help prevent crime on a larger scale. Recently developed software platforms enable the analysis of large amounts of records, obtained from many sources simultaneously. Moreover, these platforms have managed to overcome one of the main difficulties of applying video analytics, which is brand exclusivity in hardware-software compatibility. More and more brand-neutral software solutions are being implemented, that is, they allow the connection to the same network of cameras of different brands and their joint analysis, based on the same criteria [22].

These categories of software are being successfully used at the level of communities or cities or in certain industries. They enable traffic control, pedestrian behavior analysis, crowd management, etc., becoming useful aids in law enforcement, urban planning, public transportation planning, etc.

The role of video analytics in evidence gathering

What was mentioned above about the functionalities of video surveillance systems equipped with video analytics serve to prevent crime, as a special event, and criminality, as a phenomenon that affects society in general. When it comes to analyzing recordings to discover evidence of crime, we are faced with the same question: how do we analyze hours and days of recordings from several sources to find evidence that can identify the perpetrators or be used against them in court?

As a rule, any camera surveillance system that has artificial intelligence functionalities can also offer these functionalities in *playback* , i.e. on saved recordings. Of course, in the most common cases, this requires that, at a minimum, the camera, recorder, or VMS have video analytics capabilities. The search on the saved records is done with those criteria that the system has configured for the preventive function. Thus, for example, a system that has facial recognition functionality can be used to find a suspect's face based on a pattern provided by the investigator, or a system that has license plate recognition functionality can be used to search for a assigned license plate number.

The generic software, which we talked about above, offers the most video analytics capabilities compared to the VMS of the camera manufacturers.

Video analytics on stored recordings saves investigators time, human resources and technological capacity. Recordings can be analyzed at their source and using the installed software, without having to be transferred to any other device. Thus, investigators can only use that part of the records that contains valid evidence.

[21]This list is comprehensive. Not all brands of security systems offer all of these analytics functionalities. Some of them are in cameras, some in recorders and most in VMS.
[22]See, for example , Milesight , Axxonsoft , Eocortex , etc. _

Lately, generic software solutions are evolving towards enabling video analytics even for surveillance system recordings that do not have artificial intelligence functionality themselves. Software solutions have been developed and are being successfully used in developed countries that allow video recordings from different surveillance systems to be taken and analyzed jointly, based on criteria set by the investigator [23]. The limitations in use that these solutions have do not come from the lack of technical ability to perform video analysis, but from the difficulty of integrating different brands of cameras, recorders and VMS, due to copyrights and the costs that come from purchase of these rights.

Currently, software solutions of this category have not yet been developed to include all popular models of cameras, recorders or VMS. Furthermore, since these solutions were originally developed in the USA, they leave out some major brands of security equipment, which are not allowed to be used by the US government [24]. For this reason, the effectiveness of the use of these software by law enforcement agencies outside the US is very limited.

Conclusion

Despite all these advances and advantages of artificial intelligence in video surveillance systems, in our country we come across very few, if not any security systems that use artificial intelligence and video analytics.

The main reasons are financial constraints and lack of knowledge from end customers and installers/integrators themselves. Financial constraints are not simply a lack of funds, but an inability to analyze costs, needs and benefits in detail. In our country, this is also observed to a large extent among government clients, who do not invest in advanced technology, nor do they make long-term budget plans for this purpose.

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Crisis as a determinant and accelerator of long-term trends

Is COVID19 the indicator of the turn from "Efficient" to Resilient Structures?

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Abstract

All businesses are facing difficult economic and financial situations, many countries are facing bankruptcy situations of many activities, many economies are failing because they are unprepared for what awaits them. The COVID-19 situation brought the whole world to its knees. SMEs are most affected, as in the game of competition and market they fight for survival. These are the hypotheses that we will analyze in this scientific paper. We want to focus on a worrying issue for small Albanian businesses, and help these entrepreneurs find new ways and solutions to save them from bankruptcy. In this paper, the basic methods of conducting research are the combination of quantitative method and qualitative method. Qualitative research generally includes data in the form of words, descriptions, while quantitative research uses numbers and measures things. The decision to choose between quantitative research, qualitative research, or both depends on a number of factors, but the most important are: the field of research, the problem of research, and the perspective of the researcher.

Supplement information: With the pandemic caused by the novel coronavirus SARS-CoV-2 raging around the world, many countries' economies are at a crucial juncture. The COVID-19 external shock to the economy has the potential to affect corporate governance profoundly. This researc explores its possible impact on comparative corporate governance. For an economy to operate successfully, a society must first find a politically sustainable social equilibrium. In many countries, historical crises—such as the Great Depression and World War II— have resulted in a reconfiguration of corporate governance institutions that set the course for generations. While it is not yet clear whether COVID-19 will have a similar effect, it is possible that it will change patterns of what kind of firms are—from an evolutionary perspective—likely to survive, and which ones are not. We argue that to some extent, it will accelerate ongoing trends, whereas in other areas it put corporations on an entirely new course. We observe three trends, namely the need for resilience, a growth of nationalist policies in corporate law, and an increasing orientation toward "stakeholder" interests. (source: JCL Journal vol63.3)

In the case of this paper, this combination has been realized as the analysis of the literature and the evaluation of the measures by the Albanian government towards university education requires the qualitative method. On the other hand, quantitative methods are needed to measure the effectiveness of these measures.In the analysis of our work we will focus on the concrete situation, as from the research we have seen that many small businesses (about 67% have gone bankrupt) Let us not forget that SMEs are the backbone of a country's national economy, and Albania is in great need of their economic and social impact.

Therefore, we as professors of these disciplines request that through this research to bring in the focus of analysis the emergency situation in our country with the desire to serve entrepreneurs in new ideas of reviving their businesses.

Key words: Management, structure of Small and Middle Enterprises, national economy,Albania economy, Covid 19 and social impact

General introduction

All organizations today exist to fulfill a key mission in their life cycle and a set of specific objectives. If an organization wants to fulfill its mission and objectives, it must first act. When organizations are large and complex, organizational activities are more difficult to define and coordinate. When the novel coronavirus SARS-CoV-2 emerged in Wuhan, China, in December 2019, some epidemiology experts were alarmed, but the general public in much of the world, let alone business leadership, did not take notice or was not particularly concerned. A year into the outbreak of the pandemic, almost two million individuals have died, the disease has affected close to a hundred million people,1 and it has touched the lives of all of us. Around the world, countries have taken harsh measures to combat the disease, including lockdowns that have caused huge disruptions to work, life, and the economy. Not surprisingly, corporate governance is at a critical juncture as well. As the COVID19 pandemic rages around the globe, firms have struggled to survive lockdowns with severe effects on the economy. Source JCL Journal vol 63.3

The analysis of this scientific paper that we are presenting, focuses on the role of SMEs in the economy of a country like Albania, its organization and its most important forms, bringing it with a practical case study. SMEs are the pillars of the economy, pose challenges for managers and are very important for those organizations that strive to achieve excellence in today's highly competitive environment and tomorrow's management.

The development of SMEs and their contribution to long-term economic stability depends on their size and structure. This allows them to have the flexibility and ability to adapt to the conditions of fierce competition in the conditions of well-developed markets. Small and medium business management enterprises are considered as the "Moving Force" of modern economies due to their multiple contribution in terms of technological innovations, job creation, export promotion, etc. Finally, we argue that resiliency will increasingly require firms to ensure they work toward developing a healthy workforce. Thus, traditional human capital theories of the capital-labor interaction will have to be supplemented by "healthy human capital." In part, this means that firms will have incentives to hire staff that does not fall into a risk group, which raises the specter of discrimination.(*The term refers to the idea that large companies should not only serve the interests of shareholders, but their other "stakeholders" as well. E.g., Lucian Bebchuk & Roberto Tallarita, 'Stakeholder' Capitalism Seems Mostly for Show, WALL ST. J. (Aug. 6, 2020, 7:07 PM), https://www.wsj.com/articles/stakeholder-capitalismseems-mostly-for-show-11596755220)*

However, it also means that firms will need to develop practices that avoid contagion with their long-term workforce to the extent that it still needs to interact physically

In Albania, until recently there was no clear definition of micro-enterprises. Moreover, unlike many countries in Central and Eastern Europe which had a steady activity of the private sector, in Albania before the 90s there was no

sign of this sector because it was prohibited by law. The birth and development of the private sector in Albania occurs with the collapse of the centralized economy system and the opening of the doors to the market economy. In this period, small and medium enterprises had a special development, which in the 20-year history of economic transition that our country has experienced, have played a crucial role in the economic development of the country. During the transition to a market economy, as for any other country, small and medium business is the backbone of the country's economy. Small businesses act as catalysts in terms of economic growth, as well as for the development of other such areas. such as arts, human resources, manufacturing and the sports sector.

Studies show that SMEs are important because their potential to create new jobs and distribute wealth, which has multiple effects on a country's socio-economic activities, ultimately results in socio-effects. -economic in the development of a country's activities. The development of the private sector is essential in ensuring the continuity of economic growth. Of course, given that the vast majority of the private sector consists of small and medium enterprises, it is understandable that the multidimensional support of their development is at the heart of the development philosophy of this sector. The development of small and medium enterprises is a primary element for creating a sustainable economic development, reducing poverty and alleviating social problems by bringing about a more equal distribution of income and an increase in employment.

Small businesses are often very innovative companies. They can introduce new products, new management styles and new promotional strategies. A large number of new products are created precisely by small businesses. On the other hand, an increasing number of small businesses make society and the economy more flexible. This can facilitate technological innovations, provide new opportunities or ideas, and enable the development of skills for implementing these ideas. As in many countries of the world and especially in transition countries like Albania, small businesses constitute the main pillar of the economy. Small and medium enterprises in Albania occupy over 98% of enterprises and employ about 80% of the workforce.

The purpose of this paper is to analyze the financing strategies used mostly by small and medium businesses in the city of Tirana, Vlora, Durres, Fier, and to analyze the financing challenges that these businesses face most at a time when economic growth is negative.

More specifically the objectives of this study are:

a. To present the financing methods which are mostly used by small businesses in the city of Tirana, Vlora, Durres Fier.

b. To present the level of investments made by small and medium businesses.

c. To present the challenges and barriers faced by small businesses in the city of Tirana, Vlora, Durres, Fier.

d. To present the level of loans received by small businesses in the city of Tirana, Vlora, Durres, Fier.

e. Analyze the impact that the tax burden has on credit to enable the expansion and incentive of businesses.

In the study hypothesis we will focus on the research question such as: What strategies do small businesses use in Albania in order to increase profit and attract new customers?

a. What are the most successful SMEs in Albania and the strategies they use?

b. What impact is the COVID-19 pandemic having on these businesses?

In order to fulfill the purpose of the study and return an answer to the research question, the hypothesis of this study is set out below:

1. LITERATURE REVIEW ON SMES AND THEIR CHARACTERISTICS

The role of SMEs in developing countries such as Albania is essential for revenue generation and economic growth. The definition of SMEs is important for two reasons. First, researchers need to make sure that the issue they are studying is the same as that of other researchers in the field. Second, small and medium-sized government policy makers need to have a clear and concise definition in order to ensure that all funds spent are properly oriented. For example, if a government policy could be to help small businesses with their health insurance problems, a business with 100 employees would have very different problems compared to a business with no employees, except owner. (Osteryoung & Derek, 1993)

Overall, these consequences allow us to draw larger lessons for (comparative) corporate governance. We may see a reconfiguring of institutions in many jurisdictions. Corporate governance has often been analogized to biological evolution. While the shock of the pandemic had an immediate effect on many firms, it is likely to change the larger economic environment for years to come as lockdowns and smaller shocks come and go. Thus, we are likely to see persistent effects. (Mark J. Roe, Political determinants of corporate governance 1 (2003).

They can be an important factor in fostering competition. and market efficiency. SMEs also improve the efficiency of local markets and productively use limited resources such as capital. Small and medium enterprises are very important for the Albanian economy. They make up about 99% of all companies registered in the country. They contribute to increasing competition and the presence of Albanian product in European markets. SMEs are the leading private enterprises that continuously generate employment and contribute to sectoral restructuring, service development and the production of goods.

2. Methodology

The COVID-19 crisis represents the most unforeseen external shock for modern humankind, which has further slowed globalization. Starting from the beginning of 2020, the novel coronavirus caused a dramatic downturn for general mobility and international tourism including gastronomy (*Julia Margarete Puaschunder, Artificial Intelligence Market Disruption, rsch. ass'n interdisc. stud. conf. proc.: 13th int'l rais conf. on soc. sci. & humans. 1 (june 2019), http://rais.education/wpcontent/uploads/2019/07/01-jp.pdf [https://perma.cc/qhd2-dzmg].*

Research can be considered exploratory or confirmatory. Confirmatory research tests hypotheses. The results of these tests aid in decision making, suggesting a specific course of action. Exploratory research takes different approaches. They may be needed to develop ideas, leading first to the development of research hypotheses.

Some researchers often discover the reactions and activities of respondents using marketing research methods. Marketing research is a systematic process of planning, collecting, analyzing and interpreting data and information related to marketing problems. There are various methods that enable researchers to "enter into the mind of the consumer", through primary data.

A questionnaire consists of a set of questions which are presented to the respondents. Because of its flexibility, the questionnaire is the most common instrument used to collect primary data. Before completing them in the field, researchers develop and test to all small and medium businesses in the city of Fier, Vlora, Tirana, Durresi, them to adjust the questionnaires from uncertainties. The form, wording and sequence of the questions can affect all the answers.

The closed questions give all the possible answers to be interpreted and organized in tables easily. For this study, a questionnaire structured by me was developed and implemented, with the help of the leading pedagogue, and was addressed to all small and medium businesses in the city of Fier, Vlora, Tirana, Durresi, which include questions in which information was collected based on objectives, questions. research and hypotheses raised in this study.

In this study, due to the nature of the research, structured questionnaires were used in the survey, which were completed through social networks, where the interviewer is not in front of the respondent and thus the respondents are explained in advance in the initial description of the questionnaire which is its purpose and the reason why we chose that citizen. In the case of my paper, the respondents are students as they are affected by this situation.

Secondary data. For the realization of this study a methodology was used that combined primary data with secondary ones. Among the secondary data, an important place is occupied by the contemporary literature on the impact of the pandemic in the world and its impact on businesses, especially SMEs, taking Albania as a concrete case.

Primary data. Special attention was paid to the primary research conducted online which is a novelty for this study. Often times the information needed to solve the problem is not found in the internal or secondary data so we have to rely on the primary data. The research was designed in such a way as to ease the cost of gathering information and at the same time to achieve satisfactory results that would help to draw the most accurate conclusions. Primary data include the questionnaire conducted with the help and advice of the lead lecturer. After structuring it and working on Google Dosc, it was possible to provide primary data.

The questionnaire, as explained above, was piloted, so there was no ambiguity regarding the questions posed in the completed questionnaires. It was then built into Google Forms and distributed electronically to applications such as: email, linkedin, facebook, instagram, whatsapp. The disadvantage of this technique was that the owners / managers could not be contacted in shopping malls, supermarkets, markets, streets, houses, workplaces as the situation

itself does not allow us to be close to other people and have close contact with them. Maybe this was a limitation to fill out more questionnaires, but the important thing was that his goal was achieved.

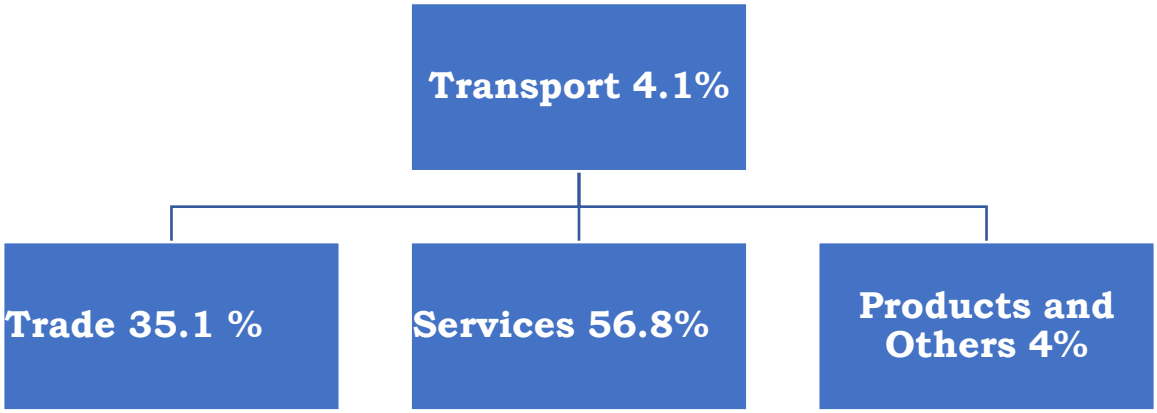
Data analysis

This study, by its very nature, has focused on descriptive analysis. The most basic statistical analysis is descriptive analysis. Through this analysis we make the initial transformation of the data, in order to describe the basic characteristics such as: central tendency, distribution and densities. One of the most effective ways of presenting information, especially numerical ones, is to construct and present the data obtained through graphs. This, also because many people are confused by the appearance of numbers.

Below is the data analysis of the distributed questionnaires.

In the first question the respondents were asked what kind of activity their SME takes place. In the following graph we notice that the activity which predominates more in the city of Tirana, Vlora, Durres Fier, is the activity of services. Knowing that this city is held for tourism, we can say that the answer was expected.

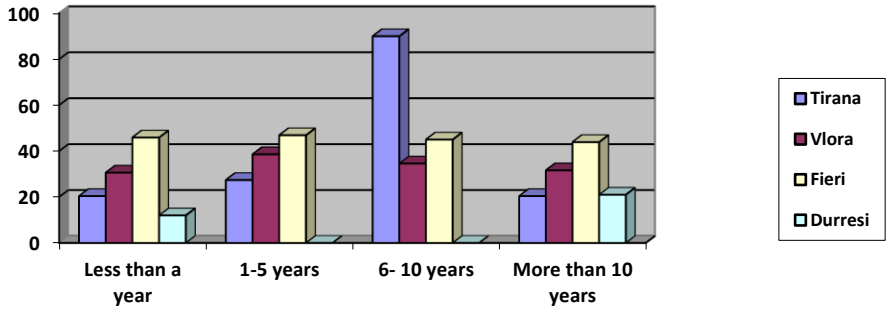
See Tab 1 below:



Tab1: The percentage of activities according to the field of activity of SME perform

In the following question we want to know the contribution that SMEs make in our country. We saw it in the third chapter where SMEs in Albania served as catalysts and regulators of the Albanian economy. Also their indicators were more positive sides and opportunities, than negative sides and threats. Therefore, in the second question of the questionnaire, the respondents were asked how many years they have been operating in the Albanian market. From the graph below we see that the highest percentage is occupied by the period 1-5 years with 51.4%.

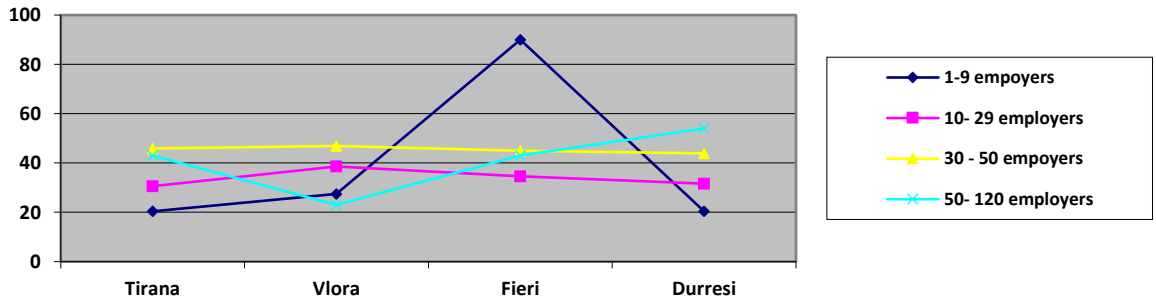
See Graph 1 below.



Graph 1: Separation of group activities according to the time created

In the next question, respondents were asked about the number of employees in their business. What we notice is that the highest percentage is occupied by the group 1-9 employees. We can say that it is an appropriate number and expected response given that the activity exercised were mostly service.

See Graph 2 below.

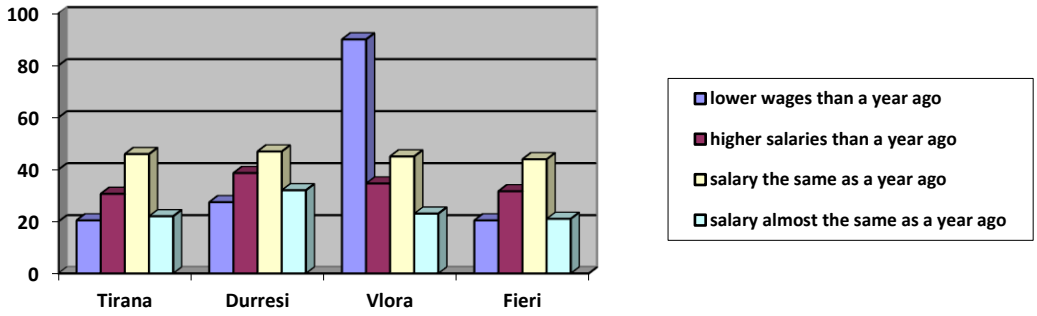


Graph 2 Number of employees in the cities where the study is conducted. Division into categories with maximum density.

The next question belongs to the second section called "Financial Performance of SMEs. The impact of SMEs on the economy is very high so they are a very important link, but what can we say about the financial resources of businesses in Tirana, Vlora, Durres, Fieri? We will see the answers in the next questions.

In the first question of the second section, respondents were asked about their income, compared to the previous visa. So how much was their income last year?

See Graph 3 below.

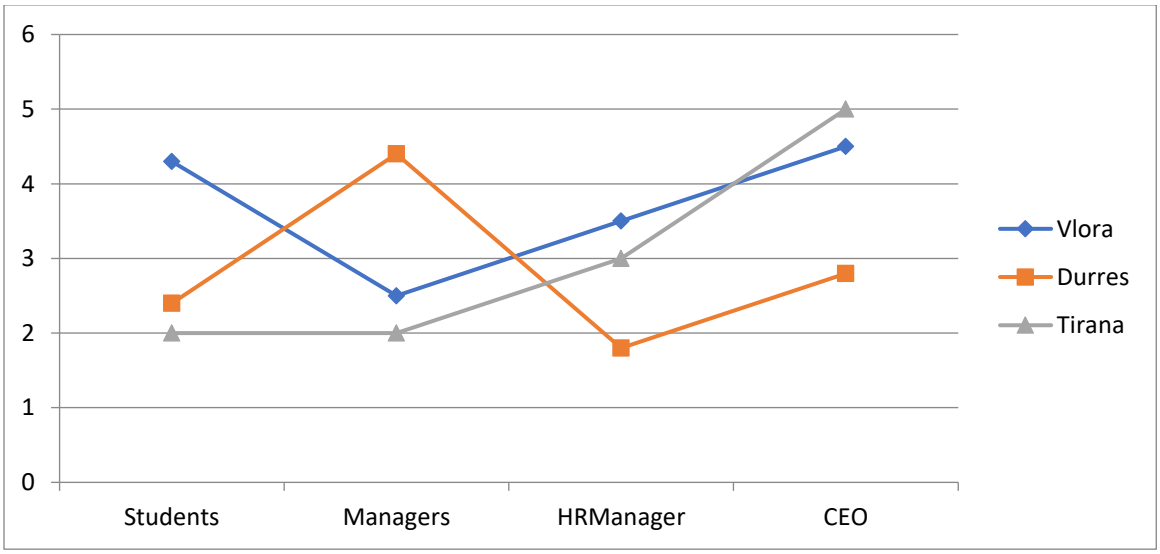


Graph 3 The indicators of wage movement during the covid- 19 situation

While in the following question they are asked about the current year. So how much are their sales this year? These questions are conducted in order to see the importance of SMEs in our country and the support that should be given to them by the government. From the figure below we see that the respondents have high confidence and have expressed that this year, despite the pandemic caused by COVID-19 their sales will increase.

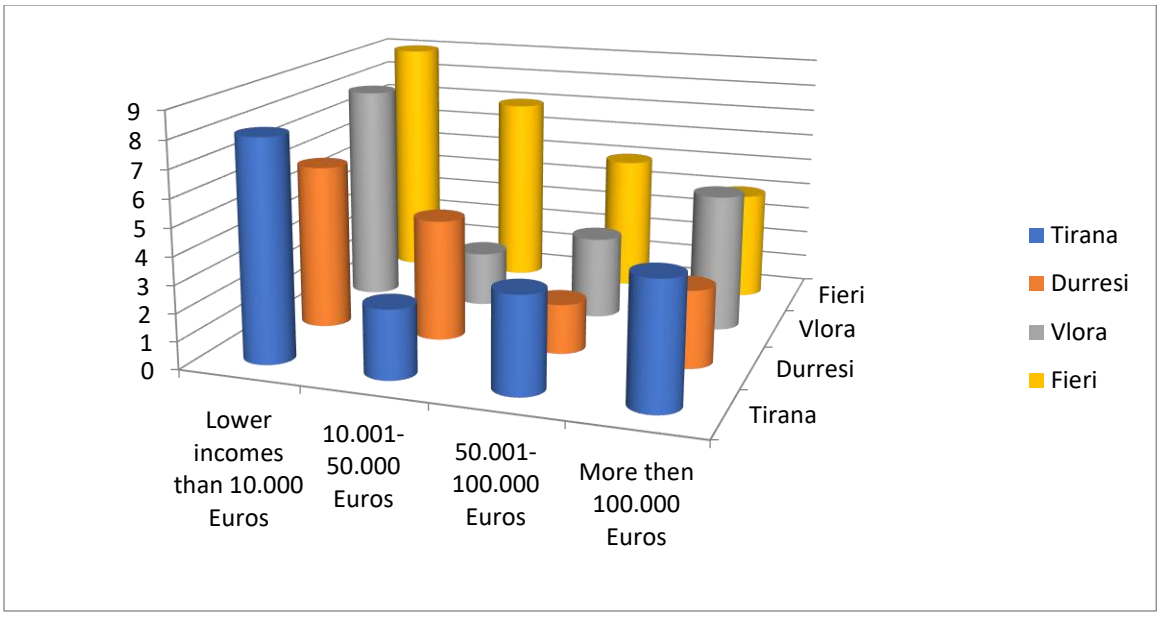
This question therefore relates precisely to this pandemic. Are SMEs in the city of Tirana, Vlora, Durres, Fier affected by the COVID-19 pandemic? Below is a table with the most common answers given by the interviewees.

See the Table 2 below.



Tab2: The Number of respondents interviewed in this study

While in the next question, the respondents were asked about investing in their business after the pandemic. They have been given several alternatives of money in Euro currency, and the highest percentage is occupied by the group "less than 10,000 Euros". See Graph 5 below.



Graph 5the interviewees source of fundings, less than 10.000 euros or more than 100.000 euros

In the next question, the interviewees were asked about the source of funding. What we see is that almost half of them 48.6% use equity, which may come from their SME, or may be savings over the years. What we see is that the Loan and Credit alternatives are close in percentage to each other.

The following question is an open-ended question, so no alternatives are provided where respondents can select.It relates to the tactic of attracting new customers. SMEs in the city of Tirana, Vlora, Durres Fier responded that they used these tactics: See the following table where the respondents are 180 people.

Answers	**Density**
Marketing	21 answers
Reducing prices	25 answers
Maximum cleanliness conditions	12 answers
Hard work	18 answers
Menu expansion and service quality	4 answers
Communication and courtesy with the client	12 answers
To add products to my store	32 answers

To always be as close as possible to the customer by meeting his requirements for the service he requires, with new and quality goods	54 nswers and 2 responses are indifferent

Table 6: Te new idesa and tactics of attracting new customers

4.Analysis and findings

In many cases with sources of personal financing, borrowed from families or relatives, but in the vast majority of banking and financial institutions of the country. Entrepreneurial activities achieved a significant increase in 2017-2018, but the covid situation 19 found them unprepared. Many enterprises closed down as shown in the analysis of the questionnaires, many others applied dismissals, losing staff or significantly reducing salaries. In our findings, 23.9% of entrepreneurial activities were subjected to the credit system, to use these funds, for non-bankruptcy, for the continuation of staff payments as they did not want to remove qualified staff from work. The departure of staff for these entrepreneurs is considered a greater loss than the pandemic situation.

5. Conclusion

COVID-19 now not only created significant health and security risks, social discrimination, and economic costs, but also brought about unanticipated opportunities. Industries profiting economically from the pandemic are comprised of hygiene, pharmaceuticals, and the medical professions.68 From an economic perspective, COVID-19 is an external shock that has accelerated ongoing digitalization trends. (*Titus corlatean, risk, discrimination and opportunities for education during the times of covid-19 pandemic, rais conf. proceedings: 17th int'l rais conf. on soc. sci. & humanities 37 (June 2020),*

Because of widespread lockdowns, "social distancing" and increased home office work in many industries, social scientists have observed a more widespread acceptance for instant communication tools, social engagement, and entertainment platforms. We can thus say that certain firms and industries have benefited from the pandemic while many others have suffered from the expenses and burdens of COVID-19. Traditional small businesses appear to be particularly vulnerable.

SMEs in Albania are classified based on the number of employees and annual turnover and / or annual balance sheet. In terms of the economic importance that small and medium enterprises have, we can say that they have a great weight in the economy of a country. They contribute to growth, job creation and social development which is to be appreciated. They are considered the "locomotive of economic growth". Although the purpose and objectives of the goal have been of a different direction, based on the results and conclusions, we can say that the paper can be a good support base for policy-making on SMEs in this crisis period for all.

In addition, the paper can help both entrepreneurs and policy makers as follows:

Entrepreneurs:

- ✓ to reconceptualize their enterprises and to orient themselves by creating an ambitious environment for increasing the value of their businesses.
- ✓ To evaluate data on current sources of financing, used by small business entrepreneurs and access to credit.
- ✓ To serve as a basis to further give some suggestions for taking the necessary actions for the sustainable development of this sector, as well as to increase the level of welfare.

The future of Albania is promising, not only that the leaders are recovering from this situation of difficulty, but also that this situation will serve for the birth of new innovative ideas. In the practice of fair management, a very motivating expression has been used "After every failure and decline, there is a flourishing situation, after every crisis there is a new economic birth" and so it will happen in SMEs in Albania.

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Challenges and dilemmas of the transformation of electrical energy from thermal to alternative energy in Kosovo

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Abstract

Former United Nations Secretary-General Ban Ki-Moon said at the Rio Earth Summit in 2012: "The road ahead is long and difficult." Sustainable development represents social development, which meets current needs, without harming the needs of future generations. In this respect, energy and the environment are essential factors of social development. Coal in Kosovo is the primary resource, respectively the primary producer of mechanical and electrical energy, at the same time today it is the most encouraging source for sustainable energy production in the conditions of the Republic of Kosovo. The search for finding, developing, and using energy from other renewable sources is constantly encouraged. Using various wastes and discharges of an organic nature serves to balance the need for thermal energy (heat) and electricity in the energy sector.

Keywords: Electricity, Alternative energy, Sustainable development, and Environment

Scientific definition

The term sustainability reflects the need for a careful balance between economic growth and the preservation of the environment. (Todaro, Smith, Minxhozi, Malaj, Bexheti, 2018, p. 530). There are over 100 definitions of sustainable development, but the best known and most classic is that of the World Commission on Environment and Development, "Our Common Future", otherwise known as the Brundtland Report. According to this definition, "Sustainable development is the development that meets the needs of the present without compromising the opportunities of future generations to meet their needs. Sustainable development maintains a delicate balance between human needs to improve material and moral well-being on the one hand and the conservation of natural resources and ecosystems on which we and future generations rely. Sustainable development involves economic growth along with protecting the quality of the environment, where one reinforces the other. The essence of this form of development is a stable relationship between human activities and the natural world, which does not diminish the prospects for future generations to enjoy a quality of life at least as good as ours. The guiding principles are that humanity should not take from nature more than nature can compensate. This means adopting lifestyles and development paths that respect and work within natural limits. The American President John F. Kennedy (1961-1963) has emphasized that "it is our duty to our time and our generation to pass on to those who come after us, as our ancestors passed on to us, our riches and our beauties. Natural. (Guri, Guri, Guri, 2015, pp. 66,67). The sustainable economic and social development of Kosovo is a challenge, which is being posed not only before the state institutions but increasingly becoming a serious preoccupation of Kosovar science. Efforts are being made to identify key points. Efforts are being made to identify the main points, which should be supported, and comparative advantages for a more intensive economic development. Identifying potentials, as well as defining advantages by science, requires an additional commitment of planning and decision-making factors that the identified potentials are used through the development and implementation of national development policies and plans. (Authors, 2012, p. 5)

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The history of the development of the meaning of energy is very wide, it is one of the basic concepts of physics not only the formation and existence of our planet but also the formation and existence of the universe, billions of years ago, are directly related to energy. While energy is the main meaning of the formation of the existence of the universe, there is not and cannot be an adequate definition that would fully describe this meaning in fewer words, as it is presented in many infinite forms and sizes. Energy is everywhere and always, from the nucleus of the atom to the universe itself, from microorganisms to the very composition of our planet (Begolli, 2018, p. 28). Energy is the branch of physics that deals with the study of energy. Branch of technology that deals with the conversion and use of different types of energy, branch of economics that deals with energy sources and ways of its use. (Samara, Haxhillazi, Shehu, Feka, Memisha, Goga, 2006). Thermal energy is the rate at which fuel can be burned, with a continuous maximum coefficient, multiplied by the net chlorine value of the fuel and expressed in megawatts of energy. Energy can be obtained from the sun, water sources, fuels, earthquakes, volcanoes, wind, sea waves, etc. (Bërxholi, 2008, p. 49)

Renewable energy is a form of energy created from inexhaustible sources. Like the sun and the wind. Electricity - energy produced from water, wind, thermal energy, and nuclear energy, building the respective industry of production of this energy. (Kabashi, Shehu, Lama, 2015, pp. 2004, 2005, 2006)

Scientific treatment

Many economists do not accept the idea that the relationship between supply and demand is determined by mechanical adjustments made by the market. They show the difference between this stream of thought, inherited from the eighteenth century, and the reality of modern societies. Here I want to talk about the regulatory role of enterprises and states. Certainly, it is not the market that articulates and coordinates the production activities, the enterprises themselves play a big role. It is another matter then whether they operate by competing with each other and should meet customer expectations. The nature and evolution of this living collective being as an enterprise, constitute a fundamental dimension of the real economy. (Calame, 2011, pp. 75.76). The process of economic globalization has turned into globalization, after 1989, with the worldwide expansion of the neo-liberal economy. Across the globe, this expansion was accompanied by the expansion of capitalism, which in itself was accompanied by the dominance of financial capitalism. Continuous productive growth and development are still seen as the way out by most states. (Morin, 2016, pp. 124,125). The economic downturn of 2008 and 2009 demonstrated the need for good governance, as it reminded us that investors and financial policymakers are rushing for short-term gains, ignoring long-term risks. For this reason, we should not presume that markets are self-regulating, and intelligent (moderate) government intervention can help prevent market collapse from shocks across society. (Bremmer, 2020, pp. 231,232). Kosovo currently has available about 0.05% of the world population and about 0.008% of the land area and produces 0.08% of total world production, measured by Gross Domestic Product (World Bank, 2016). These comparisons are based on the market value of all goods and services produced in Kosovo within a year (Gross Domestic Product) compared to the market value of all goods and services produced in all countries of the world. (Authors g., 2018, pp. 42,43). It has been known since ancient times that the prosperity and economic development of a country or region is valued by underground resources and prosperity, and the search for raw materials not only in the past but even today remains an important branch of economics and one of the faculties of human well-being. (Shabani, 1997, p. 9). Sustainable development is the development of the present without compromising the opportunities of future generations to meet their needs. Energy and the environment are essential factors for sustainable development. (Group of Authors, 2014, p. 9). At the beginning of the new century, it is important to know that economic, environmental, and social goals are integrally linked and that the policies that are being developed should reflect these reports. (Group of Authors, 2014, p. 10). The impact of fossil energy generation on environmental pollution has made renewable energy a priority in many countries in Europe and the world. In this respect, wind energy is one of the main forms of creating renewable energy. However, the level of alignment, as well as the financial viability of this type of power generation, depends very much on the level of technology used in the wind turbine. (Group of Authors, 2014, p. 79). Wind energy plays a very important role in the development of sustainable energy capacities and, as a result, the number of wind turbines is constantly increasing worldwide. Wind energy is renewable energy, clean, as well as economically competitive with conventional energy generation technologies. The wind energy sector is undoubtedly the sector with the highest annual growth. In the last five years, installations of wind power generation capacities have increased on average 22.7% per year, reaching 282,430MW at the end of 2012. (Group of Authors, 2014, pp. 79.80). The first underground works in the extraction of Kosovo coal date back to the time of the First World War. After the end of this war, some small research works were done in narrow locations to compare the quality of coal and the most suitable extraction conditions. The coal reserves of the Kosovo basin before the Second World War were not known, much less those of the Dukagjini region. (Dushi, 2009, p. 28). In the past period, hydrogeological research in the area of Kosovo has not

had a long-term character and a systematic work, but for the most part, has been conducted at the request of stakeholders, most often to solve an acute problem. The basic conclusion of all research can be the assessment of groundwaters and the opportunities they offer to solve some problems in this area, generally not given the importance it deserves. (Dushi, Kosovo Mineral Resources, Volume Two, 2009, pp. 187,188). Natural resources are an important factor in economic development. They could have been a much more important development factor if investments had been more oriented towards more intensive processing of pro-regenerative and non-regenerative materials. The future development strategy should take into account these problems, where an important component is the more economical use of natural resources, taking care of the accumulated direct effects, and incorporating more rationally. (Gusia, 2010, p. 173). Whether or not Kosovo needs a new power plant does not need comment. This question, of course, even the most skilled experts will not answer immediately, without doing some preliminary studies based on the needs that Kosovo has today and will have tomorrow. So, in well-studied circumstances, Kosovar officials and experts can think about building a new power plant, interrupting the operation of the Kosovo A power plant, and modernizing the Kosovo B power plant, because these are extreme factors of environmental pollution as a risk for the health of the population. (Begolli, 2018, p. 378). In the conditions of price liberalization, monopoly of raw materials for energy (oil, gas, coal, etc.) from different countries not only on a European scale, the use of always in increasing renewable energy from developed countries, market, and effective competition remain the main influential preconditions for stable supply and use with energy-saving (efficiency). (Begolli, 2018, p. 379). A secure energy supply is, at the same time, an adequate and uninterrupted supply to consumers, regardless of energy sources. Lack of energy raw materials, which makes many countries dependent on energy imports, as they do not have production opportunities in their countries, lack of relevant investments in this sector, lack of adequate distribution network and other infrastructure, often cause serious problems and extreme uncertainty for consumers, as in the case of Kosovo, although raw materials of this type are in abundance. In the conditions of numerous possibilities for the use of alternative energies (solar, wind, water, biomass, geothermal, etc.), as well as numerous possibilities of combining many types of energies, even this problem can be reduced to a minimum. (Begolli, 2018, p. 379). The development of renewable energy sources is affected and influenced by the activity of several public institutions in the country, which include institutions of policy-making, resource management, sector regulation, and monitoring the implementation of policies and legislation. (authors, 2020, p. 539). Wind energy, among all renewable energy sources, occupies a significant place in the energy market, experiencing over the last decade the largest growth worldwide. Among the main benefits of wind energy are the environmental advantages it presents compared to the energy produced from traditional fuels. Moreover, the cost of generating electricity from wind is among the cheapest compared to the costs of electricity produced by exploiting other renewable energy sources. It is also increasingly comparable to the costs of generating electricity from fossil fuels. (authors, 2020, p. 497). Intensive efforts are being made all over the world to provide alternative energy sources, to meet the ever-increasing needs of society. Fossil resources (oil, coal, natural gas have become very scarce and cannot afford not only the growth of the population but also the demands of modernization and continuity of life on our planet. It is a known fact that the higher the amount of energy that is consumed in Europe is of fossil origin, but their combustion has a major environmental impact on the energy sector. In addition to the pollutants that fossil fuels release when burned, they have a high content of carbon dioxide, CO_2, which is a greenhouse gas, which contributes to Climate change. Numerous materials and publications from authoritarian institutions have recently spread the idea of the urgent need to turn the chemical industry into a green industry", with demands for large masses of materials and renewable energy. 2020, p. 124). The strategy of the Republic of Kosovo for the period 2009-2018 has a special focus, in addition to the security of sustainable electricity supply, has also had the diversification of electricity sources. Lignite, given the large reserves that Kosovo has, is the primary source with which is going to be achieved basic supply, but also with renewable energy sources, which is considered important to meet market demands. (Group of Authors, 2014, p. 525).

Research and analysis

The economy and the environment are inextricably linked. For example, economic development is one of the primary reasons for climate change, but it can also solve this problem. Similarly, the study of economics is at the forefront of research on global warming, and it is economic tools - such as taxes and guidelines - that are most likely to encourage people to pollute the environment less in the future. . (Conway, 2015, p. 182). In recent years, economists have increasingly focused on the important implications of environmental issues for the success of development efforts. The classic market failures lead to greater environmental degradation. Environmental degradation can hamper the pace of economic development by imposing high costs in developing countries through health-related costs and reduced resource productivity. (Todaro, Smith, Minxhozi, Malaj, Bexheti, 2018, pp. 528,529). The comparative

advantage of each state is the specialization in marketing what they produce with greater comparability productivity and lower comparative cost. (Skenderi, 2010, p. 193). Creating new products is a high-risk venture, given the high number of new products and services that fail. There have even been times when even large companies, which have long-experienced research and development departments, have created products and services that have failed. There are several ways that a new idea for a product or service can be developed, although they find it difficult to come up with new concepts. Ways new ideas can be developed:

- Be aware that something is missing in the market,
- Upgrade existing products,
- Combine the characteristics of different industries,
- Know the socio-economic trends,
- Be attentive to everything around you,
- Question any widely accepted ideas or assumptions,
- Enter the name first and then develop the product.
- Conduct an extensive market study
- Meet a market need,
- Try to gain an advantage by launching a high-quality product,
- Try that the quality, price, customer experience are from the beginning as they should be,
- Use the right distribution channels. (Lambing, R.Kuehl, 2018, pp. 78,79,80,81,82)

The water potential in Kosovo is modest, however, with new investments and projects hundreds of thousands of megawatt-hours of electricity can be extracted, especially from the large rivers in Kosovo. Hydropower plants such as Gazivoda, Zhur, Rugova have been left out and no investments have been made for the construction of any new facilities. This is due to the orientation mainly in the power plants of Kosovo, but the possibility of valorization of Thermo-mineral waters as an energy source is not excluded, especially for industry, housing heating, and especially agricultural needs. (Blaku, 2005, p. 251). In addition to the pollution problems described above, there are several other challenges to be faced within the environmental sector. As in other areas of Kosovo society, most such reform issues are closely linked to the relative levels of investment available. (Blaku, 2005, p. 337). The quality of the environment also has a direct impact on the health of society. Pollution levels in Kosovo are high, policymakers need to provide opportunities to reverse such a trend by formulating sound environmental development policies while working to reduce current pollution. Some of the main sources of pollution are coal-based electricity generation, extraction, and production of non-ferrous metals and the chemical industry. The light industry also contributes to pollution, including the production of textiles, leather, rubber, paper, and building materials. (Blaku, 2005, p. 34). To be correct with the nature of the work and the treatment of the topic that we have for competent treatment we have offered a wide scientific and professional color as a focus of smelling scientific nectar we have oriented to professionals who know and are sympathetic to the daily work in the field of the energy economy. We targeted 25 respondents as economists, technologists, hydrologists, university professors, ecologists, geologists, and non-governmental organizations. The readiness and variety of the answers of the respondents give the firm to the work and research, being somewhat relieved by prejudices, by narrow interests to the detriment of the social interest. It is a fact that the Republic of Kosovo has underground resources but the economic dynamics do not give us the comfort to exalt ourselves while we are ranked among the underdeveloped countries this makes us open the way to electricity production in ways and methods which are easier and more economical. Availability of respondents that in addition to the development of conventional energy we have available (coal) but giving priority to the production of alternative energies as a need of the time. From the answers, we have these results where from economists two claim alternative energy, one denies it and two leave it to time for alternative energy. Technologists claim and leave time for switching to alternative energy as well as hydrologists, just as technologists claim and leave time, also university professors claim and leave time. Specialized businesses claim 100% being willing to invest in alternative energy, ecologists claim 100% in favor of transforming electricity generation, while geologists deny transforming electricity generation, the same stated by technologists, while ecologists affirm the transition. Practical scientific resources and research provide us with an insight that in addition to the use of conventional energy or coal at the same time, we must be in step with time thinking about new alternatives in the production of electricity.

Table 1. The Transition from conventional energy to alternative energy

Nr	No. of participants	Profession	Claim	Deny	Time factor
1	5	Economist	2	1	2
2	2	Technologist	1	0	1
3	3	Hydrologist	1	0	2
4	6	University Professor	5	0	1
5	3	Specialized businesses	3	0	0
6	1	Ecologist	1	0	0
7	1	Geologist		1	
8	4	Non-governmental organizations	0	0	4
	25		13	2	10

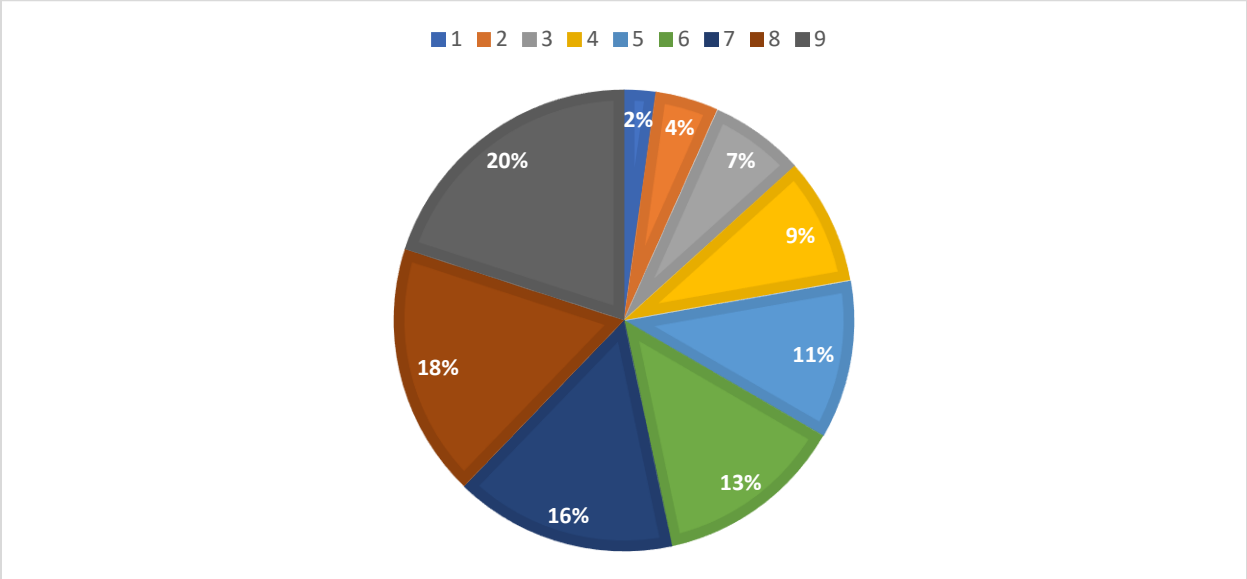

Figure.1. The Transition from conventional energy to alternative energy

Conclusions and recommendations

Renewable energies already constitute the main direction of the development of energy sources all over the world. Rapid growth, especially in the energy production sector, is driven by many factors, including cost reductions, support policies, improving financial opportunities, energy supply risks and environmental problems, increasing energy demand in developing economies, and the need for a presence in contemporary energy sources. New markets are constantly emerging in all regions, both for concentrated renewable energy sources and distributed ones. Intensive efforts are being made all over the world to provide alternative energy sources, to meet the ever-increasing needs of society. Fossil resources (oil, coal, natural gas) have become very scarce and cannot afford not only the growth of the population but also the demands of modernity and continuity of life on our planet. It is a known fact that the highest amount of energy which is consumed in Europe has fossil origins, but the environmental impact of their combustion is high in the energy sector, of course, Kosovo is the same in terms of fossil-based electricity production.

Recommendations:

The essence of any research is the recommendations that, of course, based on scientific data and practices, we can recommend:

- Rigorous implementation of laws for the protection of natural resources,

- Strict control for protection from industrial pollution with special emphasis on electricity.

- Encouraging scientific research and incorporating new technologies during energy production to protect the environment.

- Adherence to the spatial plan in Kosovo by European standards.

- Utilization of alternative energies such as solar energy, hydropower, thermal water, and bio-energy.

- Application of modern methods of industrial and urban waste treatment, including recycling.

- Participation and involvement in all regional initiatives and beyond to protect the environment.

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Substantial security challenge to web applications, using modified OTC and OWASP update

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Abstract
Internet security is studied by computer science and serves as a safe medium for exchanging data while minimizing the likelihood of online threats. Through use of advanced web-based software is growing because they provide the user with a lot of features. Web technologies have an important role in different industries, like schooling, retail, medical care, and payment systems. Session bugs are becoming more common throughout web applications whereas their value in community grows. Hackers try to profit of incorrectly designed websites so they take hold of victim's sessions and also of identities. As a result, session handling represents a substantial security challenge to web applications. Weak programming methods are among the causes for effective session acquisition. A further explanation is that the server as well as the customer verify themselves differently at first.

In the recent years most common strikes used amongst attackers is session hijacking. Based on latest recent OWASP update, session hijacking is indeed one of the second frequent assault that happens mostly. It is one important attack among others, which a hacker may use to connect directly to a customer's operating session. User Hijacking occurs when a hacker takes victim's session id, and uses it to obtain entry into the victim's actual session. This system will provide protection in case of this attack form once it has been successfully implemented.

Keywords—sessions, cookies, hijacking, attacks, hacker, cybersecurity, bug, vulnerability, one time cookies, HTTP, sql injections.

I. INTRODUCTION

People are seeing a realistic advancement of both the internet also of web technologies in current history. Most programs previously ran on desktop back in the day. However, tables have turned, and certain programs can be accessed via a browser. As a result, websites that were once static HTML websites have evolved into interactive Web apps, or full of content services available everywhere on Internet. Commercial transfers and mail sharing are only two of the utilities provided by web apps. The financial sector, schooling as well as related organisations, care and wellness facilities, various corporate groups, and state institutions are some of most influential industries in which web-based technologies are main tool of optimizing everyday operational efficiency or updating current system. Users may acquire a core resource, including Web server, as well as other resources, including database servers, via web apps. Users think these technologies are safe, however the fact is that certain web apps have serious security vulnerabilities that cause basic hacks to occur.

Session bugs are the most prevalent risk within web-based apps. All of that is attributed to web application's poor session control. Attackers take advantage of incorrectly designed websites and hijack user's sessions, which leads in identity theft. Session states stores precious data, so this sensitive data, e.g session state, provides an important objective for attackers. Whenever a person has to login to a protected website, user must fill information that verifies their legitimacy, including a username, password, or even a birthdate and contact information, which enables them to verify their identity also to unlock the information available. To reduce complexity of re-authentication, session control involves web-based application to build a session because then user does not have to go through this process any moment they want to do something. Session control means that a person connecting to cloud and viewing information is same user that logs during first time. As a result, unauthorized users also attackers aim sessions, which can be exploited to obtain access to the device with no need of authentication. User identifiers are the most popular method of session control.

A session begins whenever a user accesses or logs to another certain web site or application via their device, that concludes once consumer closes or logs out of the device, or closes website also the application. While connected, a session will briefly store data correlated also with actions of consumers. Primary purpose of session would be to keep track of user's authentication information, as well as the working session allows the user to enter the program. A session key, known

as SID, would be a name=value combination. Value seems to be a sequence of alphanumeric characters that corresponds to a web session. Every submitted query will have the SID inserted or added to it, the SID can be used as an identity provider inside the program. As a result, the SID must be created as well as to be stored safely. Data breach and Session Management attacks are third most significant Web application security concern, according to Open Web Application Security Project (OWASP). Session hijacking, session locking, or network-based spying attempts, are all popular techniques on session control.

In this paper, its presented an analysis on different session-related weaknesses as well as detection and prevention strategies, as well as different algorithms used in this branch.

LITERATURE REVIEW

A. Session hijacking

One frequent form of threat is session hijacking. Due to obvious ease with which attackers can connect directly to session, makes this form of attack dangerous[1]. Whenever an person is logging in, also about to log in to the system but has also formed a link also with server, intruder hijacks session while pretending to be original consumer. Once intruder gets control inside the server, he does not have to go to any efforts to break login key because he's been verified to get the connection. Client hijacking is where a hacker takes around a user's session key also has complete ownership of such machine although session also is running[2].

Active session hijacking occurs when an attacker assumes control of an operating data channel. The intruder will silence one computer, usually user desktop, as well as to take over user's position throughout contact interaction here between server as well as digital device, releasing server as well as the user computer's connection[3].

Passive session hijacking is similar to active session, but rather than removing consumer out of active session, hacker monitors communication within the server as well as desktop device. Inside a passive link, attacker tracks person's details also saves everything inside an personal database with attacking purposes. It's also recommended that an intruder begin by hijacking a passive session[4].

B. Related Works

With initial introduction throughout mid-90s, using cookies like session authentication tokens had already created privacy issues. Many other studies have shown that web authentication schemes have many flaws, like susceptibility of session hijacking threats[5],[6].

Browsers do have variety of bugs. Webpages have been shown to be susceptible to cyberattacks every ten minutes. That's why it is important to comprehend and address threat of such assault. Session-related bugs are well-known comparing to others. Several experts as well as academics already suggested numerous identification and avoidance approaches.That why security analysts have suggested improvements to strengthen authentication cookies' reliability. [7] proposed cookie systems which use possibly the best cryptographic approaches of having greater security as well as credibility assurances. Furthermore, some writers suggested that cookie expiry dates is being used to mitigate effects of session hijacking threats. Most systems, though, utilize longer termination periods to prevent compromising costumer experience, which reduces the feasibility of such strategy.

Cache cookies which are various types of permanent state within web (that is, client data, short term internet documents), have been found helpful to cookies in preserving client as well as session identities by [8]. Cache cookies, although immune towards phishing threats, anyway they require HTTPS security to avoid malicious activities. Linked threats, as illustrated by [9], present quite a modern category of cookie-stealing threats wherein cookies saved through one page could also be changed from an other if indeed both of domains possess a considerably longer prefix. To counteract such threats, results recommend core cookies, a simple addition to regular cookies with low operational cost.

Authors Felten and Schneider were ones to bring issue about intrusive cached data to notice[10], plus they were also the ones who created so called phrase "cache cookies." Researchers demonstrated why a host may identify the characteristics of a specific email attachment in such a web browser, allowing stored pictures being used as data tags.

Its methods, but at other hand, were recorded in the data studies and therefore are relatively hard to complete.

Researcher [11], on the other hand, revealed that store data depending on internet backgrounds might have been more readily exploited. A byproduct of Css (technology of displaying Webpages) allows a site to include software in a website which identifies if one client has one certain site inside its memory.

[12] investigate potential consequences of cached data or associated computer capabilities, which offer a comprehensive perspective of site to site domain tracing risks for consumers. Users often discover new aspects of cached data, like object identifiers, something we'll talk about later. [13] suggest using web applications that impose uniform security standards along a variety of cross-domain monitoring mechanisms.

Likewise, we focus upon on beneficial aspects using caching data inside this study. Here are suggested strategies that benefit from caching data whilst aggravating security issues.

II. SESSION HIJACKING VULNERABILITIES

Session monitoring keeps record to customer's behavior through several connections into webpages. Common application of monitoring is mostly sign in, because they are often included where customer expected sign in does not occur, like on certain b2b companies including networking platforms.

Most common method of doing this is assigning each individual a special code, like a connection identifier also either one connection token. Usually, several methods are used to enforce tokens:

- Cookie is used for token storing.
- Token is submitted throughout secret sectors generated from particular system type.
- Tokens get attached inside every connection that visitor taps after they have been generated throughout system.

Some tools are used in connection monitoring. Few programs, as starters, utilize HTTP verification. For submitting login information, search engine might utilize Http request instead of system's Website script. Nearly all this type of verification remains uncommon. Some apps utilize sessionless systems, which means apps wont utilize tokens and just transmit customer's information between every system contact. Typically, cryptographic algorithms are being utilized in accompanied by method[14].

The most serious vulnerabilities relating session hijacking are in the token generation and session monitoring strategies.

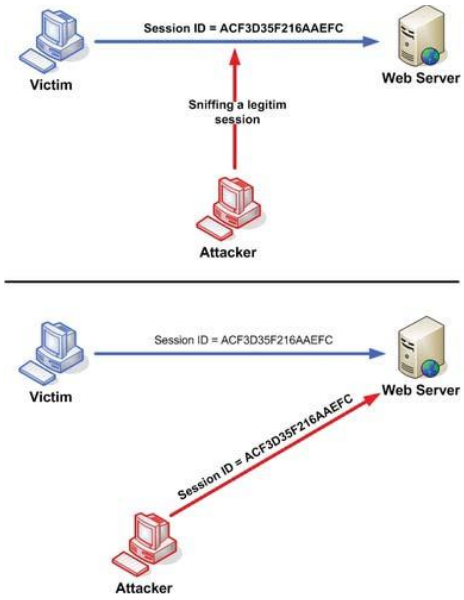

Fig. 1. Session hijacking hack is carried out by modifying a token session.

A. Token generation

Such type of vulnerability allows hackers to establish a token, so as a result they can use legitimate token. Tokens may get obtained when putting different elements of customer data, including username and perhaps e-mail address. Any hacker may decrypt token as well as generate a legitimate one when the methods are adjustable. Tokens may also form out of alphabetic character series components only with condition that every token generates irregularly[15]. Whenever token-generating algorithm implements one of three techniques, hackers have better chances of predicting tokens. Encrypted variations build tokens from encoding any standard numerical series. Infirm generation method seems to be third approach here. Since machines depend of deterministic processes, they don't seem to offer flexibility. Computers use arbitrary value producers to get around the problem (pseudorandom number generators). Distinct input devices, including sound panel performance as well as amount of button presses, get combined to produce PRNGs[16].

B. Sessions control mechanisms

Although tokens are produced correctly and volatility, hackers may be clever enough to tackle them. Hackers will do so by taking advantage of unsecured packets including vulnerabilities with in secret algorithms which websites needs in producing tokens. Tokens can also be intercepted through looking for in log data like window reports, proxy logs. Any hacker will retrieve token from logs when its included in a URL as variable. One further option is looking for tokens inside search engine as well as proxy buffer, that will save whole site also response headers. Utilizing weak token assignment systems, granting different tokens to similar consumer, also using fixed tokens of every customer are few of many methods. Furthermore, ineffective session closure strategies open up several cyber threats. Activity must be short also feasible to decrease contextual timeframe of threats. Since certain programs don't have a procedure specific to session's termination, hackers will seek several different properties prior to session ending. Whenever customer signs off, system deletes token from client's computer; however, because customer (either a hacker) has sent any formerly accessed token, system continues allowing it [17].

In plight scenarios, system gets zero demand during sign out also the connection is not invalidated. When any intruder acquires that key, he or she will be able to still employ session much like a person that has not signed out at all. Eventually, unless tokens are stored inside cookies, cookie variables can be vulnerable to many attacks. Because protected label is not placed inside cookies, it gets transmitted through unsecured packets [18]. Cross-site scripting threats will capture hackers

because HTTPOnly marker hasn't been placed. The reach of a cookie may be used by hackers. Some weaknesses are related to incorrect HTTPS utilization. For starters, certain programs recognize HTTPS secured sectors yet are using matching token outer of secured sectors. As a result, hackers will get token through eavesdropping HTTP traffic. Second, also inside secured sectors HTTPS can be utilized, several systems support HTTP protocol. For this reason , hackers may persuade customers to send HTTP calls so they snatch token. Spoofing emails, posters, and psychological manipulation are widely used in several threats. Ultimately, many apps utilize HTTP for viewing static resources such as photos, script as well as Css. Detecting such inquiries allows hackers catching tokens.

Hackers will pull out threats including cross-site request forgery, session sniffing, predicting, as well as session fixation, also HTTP reply separating through leveraging weaknesses already mentioned above. Here its defined the triggering weaknesses to every threat, that hackers should check prior to launching a thrust [19].

C. *Session sniffing*

Such threats include indirectly blocking any information gathered being shared in sessions.

a) HTTP packets sniffing.

HTTP streams are intercepted within that attempt. Hackers should find any analyzer on a computer inside this user's system or even Website software's institution's domain. Four supporting underlying problems exist. Initially, non-HTTPS areas of such site may be identified. Stable marker is also not fixed, for starters. Third, service provides HTTP calls to sites that are protected by HTTPS. Consequently, prior to authorization, program employs HTTP[20],[21].

b) Cache sniffing

Token can be obtained in every configuration including them if hacker gains entrance to proxy cache as well as search engine. Two triggering weaknesses are related to cache management of Webpage. HTTP response headers does not include instructions. Than CacheControl:private policy hardly allows buffer to be used on computer where customer is currently running. With distributed computers, such scenario poses danger (e.g. in Internet cafes)[22].

c) Sniffing logs.

Tokens are obtained through reviewing logs with in various structures engaged with server-client interaction throughout this threat. Two supporting weaknesses in this system exist. Primarily, token gets sent through URL variables, that also means token could end up with in logs. To continue, token gets sent with a secret sector, also GET calls are accepted rather than POST requests by system. The client-side scripting file may implement this same demand reversal. Token gets submitted as URL variable, resulting logs will contain it.

d) CSRF

Such threat induces that target performs acts inside an environment where they have been authenticated; a common tactic would be to deliver connection via email either via instant messages. This threat has the potential to damage customer details. Distinctly of several other threats CSRF also attempts to perform precise activities rather than gaining session access[23].

e) Fixation of the session

Even before one user's authorization, hacker addresses token. There are three stages towards hacker's threat:

1-The first step is to establish the session. Hacker establishes so called "bait session" into the computer also accepts either generates key. Under certain instances, intruder will submit demands during routine periods to maintain the connection active, so called session maintenance.

2-Fixation of the session. Token is inserted through user 's machine by the hacker.

3-The access into the connection. Hacker awaits around upon victim so they access session before hacker attempts getting connected himself. There are two types of connection control algorithms:

- Rigorous systems permits just established, predefined tokens, while tolerant systems welcomes recent tokens which launch brand fresh connection.
- Hacker offers specific tokens also utilizes them into tolerant schemes. In rigid schemes, hacker opens one connection which gets leave active during threat.

Conditioned by process of transmitting each token, various methods are used to session fixation[24]. Hacker will compel their target into tapping one connection built impromtu using URL variable. Depending on existence of protected sector, hacker will take advantage of an XSS weakness.

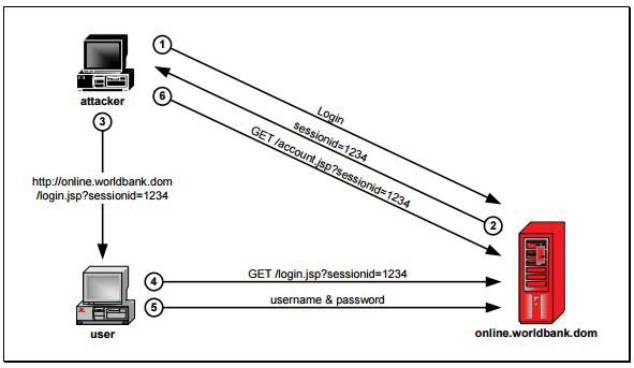

Fig. 2. Again from beginning of procedure until session use, this image describes mechanism of session fixation.

Bad configuration as well as deployment allows session fixation. As a result, through successful Software product

architecture, above mentioned approaches of such vulnerability are being removed[25].

III. PROPOSED ALGORITHMS

Here its propose a new approach for preventing hijacking threats in this segment, focusing in recent study to current work, also resolving their numerous implications.

A. One time cookies

That cookies gets substituted like connection authentication keys, its suggested an alternative method. One time cookies, this approach, offers a strong protection toward unauthorized access, making sure they still are meeting needs of dynamically dispense systems. OTC generally, keeps connection verification and further connection monitoring functions apart.

Attacker's target throughout this model would be to gain charge over connections that have been created through customers of a website. OTC considers all inactive yet aggressive polynomial time antagonists. Knowledge released betwixt client's browser as well as website is accessible toward silent adversaries. Data gets caught either of system (digital), and even by system log files. Inactive adversaries may attempt conducting or reusing authentication tokens depending towards knowledge in order to sabotage another customer's session connection. An aggressive attacker will have similar knowledge possession like inactive opponent, however attacker may also selectively manipulate enquiries as well as replies sent betwixt web page and system. Proactive attacker, may alter, construct, also prohibit messaging of entering its desired target. Any successful attacker may also carry out domain-level threats between the website also the app, such as session fixation, cross-site scripting, also cross-site tracing. Malicious software attempts of capturing OTC token or stealing OTC permanent data from customer's device are both options for a practical challenge. Here threats are not counted under which attacker assumes possession including its victim's account as well as operating system (for example, via leveraging cache overload either malicious programs) but rather threats mostly on software product architecture. Furthermore, OTC hasn't had security from dishonesty threats. Encrypting the configuration among one's authentication data during sign in process, OTC uses HTTPS. Then as result, OTC expects if HTTPS has been set up properly also securely. Developers don't accept threats which compromise HTTPS's security assurances throughout successful authentication. Attacker might even extract customer's password, which is much useful accreditation, whether alike threats were necessary.

Here are defined certain characteristics that must be present in order for providing a reliable as well as realistic solution for authorization cookie. Such characteristics were being used for OTC build: This possible framework ought to have strong user session authorization and be automatically protected towards session hijacking is called connection honesty. For demand authentication, this suggested algorithm doesn't need condition inside website. Namely , through consideration regarding system load condition, it really isn't distinct than authorization cookies. Such characteristic are important towards massively scalable websites. That theoretical system ought to be identical with cookies in terms of customer interface. There is no need for extra human engagement. Particularly, switching through authorization cookies and OTC doesn't really affect that customer functionality. This possible framework will provide authentication tokens that are completely classified as well as promises of honesty. Authorization token particularly, also shouldn't release data that undermines website confidentiality, being immune against cryptographic algorithms threats and being abscond.

As order, OTC generates another specific token. The connection key binds every token in specific demands; therefore, token could become reusable over several demands. Particularly , OTC tickets are stored in state details needed for evaluating token. Every other card becomes secured using a lengthy code that is exchanged across servers throughout website. As a result, data contained throughout card could become accessed by website servers. Details of the card are not visible towards recipient. Creds are keys that are saved inside application, while tokens are properties that are added into each requisition.

B. SSL Stripping-based hijacking attacks

This architectural design is split into two sectors: server as well as client side structures. This global selector collection gets downloaded via a single system by customer. Many of webpages inside this index have their safety ratings listed here. Just like mentioned herein, such collection gets displayed different levels to alert notifications towards target consumers. Customer submits he's responses by consumers to system on regular basis such that neural networks could use them for boosting safety levels for webpages.

Customer mechanism operates through transmitting HTTP POST calls received through websites as well as tracking them. Requisition isn't apprehended anyway when link becomes HTTPS. Moreover, if somehow demand isn't of POST kind, inspection doesn't really exist. Next its searched whether page contains HTTPS when person gives every POST call. Whether this is the case, we couldn't intervene. Unless website uses HTTP also has a passcode as well as sign in area, demand becomes intercepted. Than we search whether page is already inside any database after intercepting this message. Than we get protection ranking through database, when something exists within data set.

The server collects data about person's behavior through different customers also utilizes this for increasing safety status in webpages. Implementations on server gets divided to two categories. Initially, we measure 50 percent differentiation threshold regarding ours sample using websites within certain current databases. For determining the linear regression r, its used a excellently analytical methodology named divide validity checking. Throughout this method, its divided the customer information for also sites across mutually exclusive subsets as well as looking for correlations among them.

C. *Using modified OTC*

Below you can find indeed elements of presumed structures. Person, also known as a customer, will be one that makes the case. If customer needs buying anything, they can submit another message into server which includes customer's login details. Customer would be granted an OTC upon effective authorization, that OTC is used to verify customer about any requisition user creates. When any customer replies, it's also accompanied by an OTC.

Proxy seems being a machine which serves like middleman betwixt any external system and the internet. It's always shown on the customer's either on user's end. In other hand, rather than utilizing proxy service on customer end, they utilize RPS on server.

Like a result, RPS must process any call from customer. RPS's goal is taking assigning OTC, address of IP, connection ID, but also website signature, then RPS would search through connection ID, OTC, IP address, also website signature with every single arriving message. When either one of variables shift, RPS will switch into different tab.

This really is the system to whom user sends an message. That server verifies passwords, processes every user demand, also communicates with users.

Below it is shown how suggested methodology operates.

The client inserts login details. Call gets into RPS submitted, that collects each user's internet protocol address search engine signatures as well as passes it all into database. Database verifies passwords, executes call (i.e., tarns then delivers http call straight to user), yet not until passing via algorithm. OTC is generated by RPS , either connection ID, also sends those straight to user, along with reply. After that, customer saves OTC which is sent. Customer also can submit OTC through RPS within each call he/she makes. Between each fresh call submitted mostly from customer, RPS tests this as well as generates OTC anew. Because OTC, internet protocol address, connection ID, or application signature shift, RPS halts connection.

IV. FUTURE WORK

In this peper one time cookies are analysed and presented. One time cookies within websites are an essential starting point toward ensuring connection consistency across current operating systems. For supporting OTC, technologies like Java Servlets, and Ruby on Rails must be modified. Most good topic implementations would require union assistance, whether within protocols among various implementations.

Since HTTPS is hard even expensive to implement, multiple people also searched towards a connection honesty approach which could run across HTTP while also being protected toward inactive system hackers . Which seems to be another intriguing area of study which isn't addressed via one time cookies.

V. CONCLUSIONS

Session hijacking remains one significant problem which any webpage owner as well as company should prioritize when everything comes to protecting any online details. Here into this scientific report covers many of the weaknesses associated with accessing website, as well as attacks which an intruder could face into compromising sensitive data.Here study discussed different forms of connection intercepting attacks but also whether they impact web operations. Majority of web-based session hijacking are caused by spoofing hacks viruses, cross-site scripts, as well as SQL injection attacks , among other things. Strategies towards stopping connection hijacking as well as methods employed among attackers for committing web-based crimes are addressed. Prior research also shown that many loopholes already remain throughout online payments, necessitating an immediate implementation of such strong amount of protection in websites which secure personal data during assaults.

Through ages, certain dangers that come with using cookies as connection authorization tokens are being established.

Solutions of verification cookies are being suggested, although most haven't yet been implemented since them cannot fulfill standards in big scalable online systems. Most of suggested solutions, in particular, necessitate expensive operate coordination through website, which would be very major problem with scalable applications. Here OTC is proposed, a premise safe solution of verification cookies, throughout this analysis. OTC may be hardly immune towards session theft however that often keeps cookies convenience as well as consistency advantages.

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Antecedents of online shopping behavior and their effect on consumer satisfaction

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ABSTRACT

This study examines the antecedents of online shopping behavior and their effects on consumer satisfaction. The effects of convenience, variety seeking, social influence, advertising, trust, and products on online shopping behavior and their effects on consumer satisfaction. A quantitative research design was used to collect the data through a questionnaire based on a sample of 312 respondents from rural residences in Kosovo. Data were analyzed using structural equation modeling (SEM). The results showed that five out of the seven hypotheses were accepted and supported. The results showed that there is a relationship between convenience, variety seeking, and product with online shopping behavior, and online shopping behavior has a relationship with consumer satisfaction. The main conclusion is that rural consumers are satisfied with online shopping.

Keywords:
Convenience, variety seeking, product, online shopping behavior, consumer satisfaction

Introduction

Online shopping is defined as the process of purchasing products and services over the internet (Jusoh & Ling, 2012). Online shopping, also known as electronic commerce (e-commerce) is one of the advanced products of the technological changes that have changed the way of doing business and the way of exchanging business transactions (Smith, 2019). Online shopping has been increasing worldwide. A significant increase is seen also in Kosovo with the highest percentage of internet users in Europe 93% of the population (Eurostat, 2019). Online shopping has emerged as one of the most popular Internet applications. Online shopping has proven to offer more satisfaction to modern consumers who seek speed and convenience (Yu & Wu, 2007).

Nowadays the best way to purchase a product or service is through online shopping. Based on the importance of online shopping has increased the interest of the researcher to investigate what factors affect online shopping behavior and their relationship with consumer satisfaction. Researchers in the past attempted to explain the antecedents of online shopping and stated that demographic characteristics such as age, gender, education, income, and variety of products (Beqaj et al., 2019) play a significant role in purchase decisions and also in consumer satisfaction. Most of the studies that are conducted in emerging economies like Kosovo have investigated the factors that affect online shopping and what affects their satisfaction, but no one has studied how much our consumers who live in rural areas are inclined to buy online (Ismajli et al., 2022; Jashari & Rrustemi, 2017).

Therefore the purpose of this research is to assess the online shopping behavior of the rural consumer, to see how rural consumers engage in online shopping, Since rural customers stay in villages and are not familiar with online shopping, what percentage of rural consumers engage in online transactions and how they feel about online shopping. Consumer satisfaction and demographic factors affecting shopping behavior have been studied a lot (Beqaj et al., 2019; Davis, et al., 2021; Uzun & Poturak, 2014). Therefore, this study tries to investigate convenience, variety seeking, social influence, advertising, product, and trust as antecedents of online shopping behavior and their effect on consumer satisfaction.

Literature Review

The way of exchanging goods and services between parties has existed in different forms for centuries and has also evolved to meet the needs of individuals and technological advancements. Online shopping is one of the advanced products of the technological changes that have changed the way of doing business and the way of exchanging business transactions (Smith, 2019). Online shopping is a process whereby consumers directly buy goods and services from a seller without an intermediary service over the internet (Sunitha & Gnanadhas, 2014).

The intentions of consumers to buy online depend on the quality of the products, the security of websites, and the web environment offered (Chen & Dibb, 2010). Intentions to do online shopping affect user behavior and lack of intention limit consumers to go online shopping. Before making purchase decisions a consumer evaluates online products by getting information from his reference group. This means the more people suggest e-buying to each other, the more this buying method will be popular among people. This makes necessary the use of word-of- mouth marketing for retailers (Javadi, et al., 2012). The researcher suggested that consumers' purchase decisions are explained by their attitudes and consumer attitudes are affected by intention. When this intention is applied to online shopping behavior, the research can examine the outcome of the purchase transaction (Fishbein & Ajzen, 1977)

Convenience

Online shopping convenience has become one of the primary impetus underlying consumer tendency to adopt online purchasing ((Law, et al., 2016; Xiang et al., 2016). The willingness of customers to buy online can be affected by convenience (Katawetawaraks & Wang, 2011). Researchers have found many reasons why convenience is positively related to online shopping behavior (Dang, et al., 2018) found convenience as one of the main concerns in the online shopping culture of the participants because convenience is the most decisive factor that has influenced consumers' online shopping. Another reason why convenience is indirectly related to online shopping behavior is because of the ability of the consumer to compare different online stores, the easy and convenient online payment system, and the ability to place an order at any time that is convenient for them (Wei, Lee & Shen, 2018). Another study conducted in India revealed that convenience is positively and significantly associated with user behavior and indirectly impacts consumer satisfaction (Davis, et al., 2021; Uzun & Poturak, 2014). Based on the above the following hypothesis is proposed:

H1: Convenience is significantly related to online shopping behavior.

Variety seeking

Often consumers find themselves in a variety seeking buying different products from their day-to-day routine. When consumers are faced with low involvement in particular product, but there are noticeable differences between brands, this is known as variety (Kotler & Armstrong, 2012). In this case, the consumer does a lot of brand switching, simply for the sake of variety rather than because of dissatisfaction.

When it comes to product categories like this, the marketing approach for the leading brand and smaller ones can vary. The dominant brand will aim to promote repeated buying by taking up most of the shelf space, keeping their products fully stocked, and frequently running reminder ads. On the other hand, smaller firms will try to stimulate customers to try something different by presenting lower prices, exclusive deals, coupons, free samples, and advertising that highlights reasons for exploring new options (Kotler & Armstrong, 2012). Davis, et al. (2021) revealed that variety seeking has a high influence on consumer online shopping behavior. Hence, the following hypothesis is proposed:

H2: Variety seeking is significantly related to online shopping behavior.

Social influence

Social influence is prominent in the online shopping process. Social shopping refers to shopping behaviors, orientations, or motives in an online shopping platform or social commerce (Wang & Zhang, 2012). Venkatesan (1966) believes that the influence or change of shopping attitudes and behaviors during consumer shopping is mainly from other people or groups in their social networks. Reference groups, social class, and sub-culture play a vital role in influencing consumers' buying decisions (Ajzen, 1991).

Social influence impacts an individual's buying process by using social media networks to share, recommend, suggest and comment on products or services. Some researchers assessed that social influence doesn't have any significant relationship with online shopping behavior (Prawira & Sihombing, 2020; Sonwaney & Chincholkar, 2019). But, some researchers stated the opposite that social influence has a significant relationship with online shopping behavior (Davis, et al., 2021; Liu, et al., 2019). Therefore, the following hypothesis is proposed:

H3: Social influence is significantly related to online shopping behavior.

Advertising

Advertising is defined as brand-initiated communication intent on impacting people, always associated with the brand, and a brand can be an authentic brand, an individual, or a cause (Dahlen & Rosengren, 2016). Advertising can influence consumers to buy a product or patronize services they have never tasted (Dahlen & Rosengren, 2016; Belk, 2017). Advertising influences lifestyle and buying behavior. Thus, for businesses to be well known, they have to invest in advertising. Researchers conducted empirical studies on the effect of advertising on online shopping behavior (Udegbe, 2017; Kim, 2018). The results of the studies revealed that advertising content plays a significant role in influencing online shopping behavior. This evidence was further affirmed by researchers, (Nasaidi & Hassan, 2021; Davis, et al., 2021). Hence, the following hypothesis is proposed:

H4: Advertising is significantly related to online shopping behavior.

Trust

Trust is another important issue in consumers' online shopping behavior (Gommans et al., 2001). Trust is connected with security. A Consumer cannot see a product in person while he is ordering it, and cannot look into salespersons' eyes while doing that, so companies need to build trust among their consumers to avoid uncertainties. Trust is a necessity when it comes to online shopping (McCole & Palmer, 2001). Due to the risky nature of online shopping, trust and risk play significant roles in effecting online transactions it has a great contribution to the success of online shopping (Pavlou, 2003). Online trust is based on the perception of the risks or benefits of the online transaction (Teo & Liu, 2007). The greater the trust, the more likely that consumers engage in online shopping and the shopping will be repeated. Other studies affirmed that trust has a significant relationship with online shopping behavior (Davis, et al., 2021; Ayodele & Olise, 2021; Uzun & Poturak, 2014). Thus, the following hypothesis is proposed:

H5: Trust is significantly related to online shopping behavior.

Product

Product features play a crucial role in consumer decision purchase. Much evidence points to the crucial role of the product feature in online shopping behavior (Chitturi, 2007; Chernev, 2004). They argue that when consumers buy online, functional characteristics of the products help achieve prevention goals, which emphasize safety and prevention of negative outcomes. The more the product has a higher value and reduced buying frequency the more information is needed to investigate the reasons. As stated by Davis et al. (2021); Uzun & Poturak (2014) product characteristics are significantly related to online shopping behavior, because of the trust in the product that they have purchased before and they were satisfied with the product they received after buying online. Hence, the following hypothesis is proposed:

H6: Product is significantly related to online shopping behavior

While, convenience, variety seeking, social influence advertising, trust, and product features are positively related to online shopping behavior, Davis, et al. (2021) revealed that online shopping behavior is significantly associated with consumer satisfaction. The more consumer is satisfied with buying online, he will continue to buy online in the future. Therefore, the following hypothesis is proposed:

H7: Online shopping behavior is significantly related to consumer satisfaction.

Based on the above literature review a research model is put forward online shopping behavior and consumer satisfaction as dependent variables and convenience, variety seeking, social influence, advertising, trust and, product as independent variables. The relationship between these variables is depicted in figure 1.

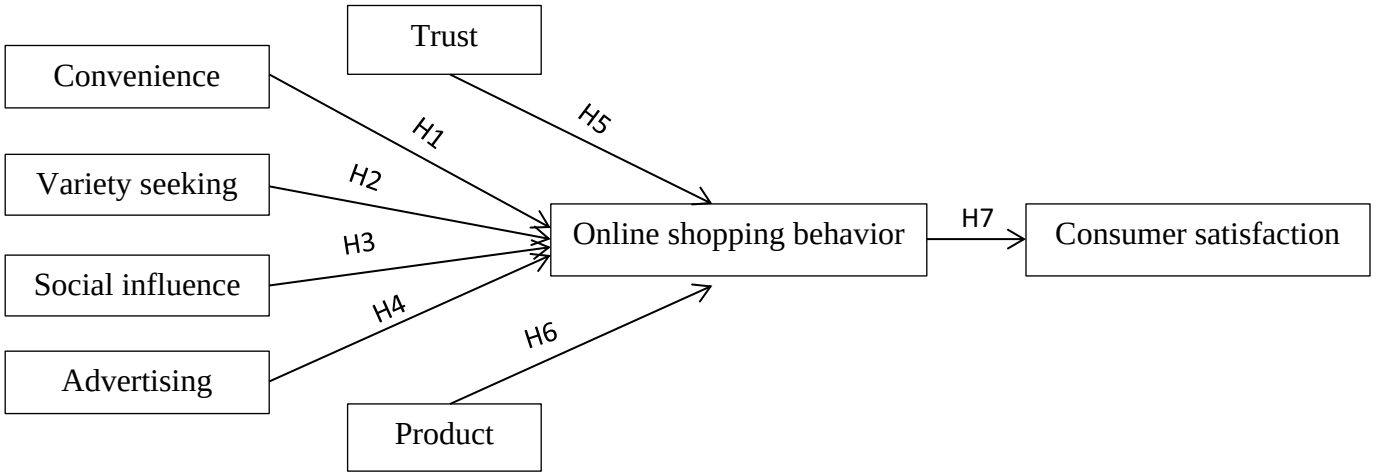

Figure 1. The Research model

Research Methodology

Research instrument and data collection

This study utilized a quantitative research design to assess antecedents of online shopping behavior and their effect on consumer satisfaction. It was conducted in Kosovo and all the respondents live in a rural residence. To develop a research instrument were used eight dimensions each containing their items. Six of them were independent variables and each of them was measured using their items.

Thus, convenience (C) was comprised of 3 items, variety seeking (VS) of 3 items, social influence (SI) of 5 items, advertising (A) of 3 items, trust (T) of 3 items, and product (P) of 3 items. And, dependent variables: online shopping behavior (OSB) of 4 items and, consumer satisfaction (CS) of 5 items. All research indicators are engendered from a previous study by Davis et al. (2021). The questionnaire conducted in this way was distributed to the respondent that lives in a rural residence in Kosovo. Data were obtained through an online survey. An online survey has several benefits. It is less costly, has no geographical limits, is convenience for both respondents and researcher, and has anonymity security. Data were collected from 312 samples from June to November 2022.

A questionnaire survey was used to collect respondents' responses, the survey items were developed and adopted from a previous study by Davis et al. (2021). The questionnaire was translated from English to Albanian for better comprehension of respondents. A five-point Likert scale ("1" representing "strongly disagree"; and "5" representing "strongly agree") is commonly used since it is one of the most basic psychometric tools and is often used in educational and social science research (Joshi et al., 2015), as shown in Table 1.

Table 1. Research instrument

Construct	Code	Item
Convenience (C)	C1	Placing orders from anywhere
	C2	I shop mostly through online since its available round the clock
	C3	Low and reliable shipping
Variety seeking (VS)	VS1	I browse online shopping stores to window shop at your leisure
	VS2	I prefer online stores than offline stores due to broad availability of product ranges
	VS3	I browse online shopping stores to know what is in trend
Social Influence (SI)	SI1	Do you share your purchase online
	SI2	Do you purchase when a product is being shared by your friend/relative/ colleague
	SI3	Do you shop based on social media feeds or posts (Instagram, WhatsApp status, Facebook posts, Twitter)
	SI4	I use online forums and online communities for acquiring information about a product
	SI5	If I am offered a reward for sharing my purchase, I would share them in social media
Advertising (A)	A1	Advertisements provide complete information on a product
	A2	Personalized or targeted advertisements act as a motivator to purchase a product
	A3	Banner ads are distracting but provide useful information regarding products and offers
Trust	T1	There is no difference between the product quality regardless of being purchased online or offline
	T2	Product information given by the provider is verified and not biased
	T3	Online provider ensures that customer reviews and ratings are not biased
Product	P1	Product belonging to a brand is an obvious to perform well
	P2	Customer reviews and ratings for products in the digital world(social media, shopping sites, forums)
	P3	Getting to know about products performance through experts(expert blogs, videos from experts)
Online shopping behavior (OSB)	OSB1	When I go online shopping, I buy things that I intended to purchase
	OSB2	I am not a person who makes unplanned purchase
	OSB3	I avoid buying things that are not on my shopping list
	OSB4	I often buy things that I need
Consumer satisfaction (CS)	CS1	I am satisfied with buying products online
	CS2	I am satisfied with the price, I pay for the goods that I buy online
	CS3	I am satisfied with the online store for providing better service after purchase
	CS4	I am satisfied with the customer care while and after buying online
	CS5	I am satisfied with delivery of product after buying online

Source: Modified from Davis et al. (2021)

The questionnaire was constructed in two parts. The first part of the questionnaire represents the demographic characteristics of respondents. The second part has eight indicators as shown in Table 1 to measure independent and dependent variables. Through online survey participants have stated how much they purchase online and what factors influence their decision to purchase online and from that how satisfied are they with online shopping.

Table 2. Respondents Demographic characteristics

Gender	Frequency	%
Female	164	52.6
Male	148	47.4
Age		
<18	12	3.8
18-25	75	24.0
25-35	87	27.9
35-45	63	20.2
45-55	41	13.1
55-65	28	9.0
>65	6	1.9
Marital status		
Single	104	33.3
Married	205	65.7
Divorced	1	0.3
Widow	2	0.6
Employment		
Student	46	14.7
Unemployed	87	27.9
Self employed	38	12.2
Employed	141	45.2
Education		
Elementary	87	27.9
High school	82	26.3
Bachelor	93	29.8
Master	26	8.3
PhD	6	1.9
Other	18	5.8

Table 2 shows that most of the respondents belong to females 52.6% and males with 47.4%. Most of the respondents are from the group aged 25-35 years at 27.9%, followed by the group aged 18-25 years with 24.0%, group 35-45 years with 20.2%, 45-55 years with 13.1%, 9.0% group age from 55-65 years, and less of the respondents belong to the group age over 65 years with 1.9%, and under 18 years with 3.8%.

Concerning respondents' marital status 65.7% are married, 33.3% are single and a few of them 0.9% are divorced and widowed. Concerning respondents' employment status, most of them are employed from 45.2%, 12.2% are self-employed, 27.9% are unemployed, and less of them are students from 14.7%. Regarding respondents' education, 279% have elementary education, 26.3% have a high school, 29.8% have a bachelor's degree, 8.3% master's degree, 1.9% have PhD, and 5.8% have other education.

Findings and Discussion

Data were analyzed using Smart PLS 4 and SPSS 25 software. SEM technique has been used to assess the measurement model and to estimate the structural model. To analyze gathered data have been used two-step approach, as recommended by Anderson and Gerbing (1988).

The first step involves the assessment of the reliability and validity of the measurement model, while the second step tests the structural relationships between the latent constructs. Reliability and validity of the construct have been conducted using Cronbach's Alpha and composite reliability. The threshold of Cronbach's alpha should be equal to 0.7 or above to be considered acceptable (Hair et al., 2017). The evaluation of the measurement model is performed to show how the variables combine to represent the theory based on convergent and discriminant validity.

Convergent validity

Convergent validity refers to how closely the new scale is related to other variables and other measures of the same construct. Table 3 shows that Cronbach's alpha values range from 0.702 to 0.871. The composite reliability value range from 0.827 to 0.921, and results confirmed that all reliability values exceed the cut-off point level of 0.70. Results confirmed that all reliability values exceed the cut-off point level of 0.70 (Hair et al., 2017). The values of AVE should be 0.5 or above to be considered good because if the value is below 0.5, it means that there is an error (Hair et al., 2017), that based on the survey results average variance extracted values range from 0.589 to 0.796, that is over the recommended value.

Table 3. Convergent validity

	Cronbach's Alpha	rho_A	Composite reliability	AVE
Convenience	0.704	0.724	0.834	0.627
Variety seeking	0.871	0.890	0.921	0.796
Social influence	0.828	0.835	0.877	0.589
Advertising	0.764	0.772	0.864	0.679
Trust	0.796	0.926	0.874	0.704
Product	0.702	0.744	0.827	0.615
Online shopping behavior	0.860	0.956	0.907	0.722
Consumer satisfaction	0.842	0.864	0.886	0.610

Discriminant validity

Discriminant validity tests whether concepts or measurements that are not supposed to be related are actually unrelated. Discriminant validity was assessed with the Heterotrait- monotrait ratio of correlations criterion (HTMT) proposed by Henseler et al. (2015). As shown in Table 4 the highest value obtained was 0.742, which is lower than the threshold of 0.85 (HTMT0.85) (Kline, 2011) and 0.90 (HTMT0.90) (Gold et al., 2001), indicating that there is no concern about discriminant validity.

Table 4. Discriminant validity

	C	VS	SI	A	T	P	OSB	CS
Convenience								
Variety seeking	0.587							
Social influence	0.350	0.742						
Advertising	0.294	0.357	0.385					
Trust	0.403	0.290	0.200	0.518				
Product	0.578	0.633	0.608	0.516	0.330			
Online shopping behavior	0.223	0.547	0.480	0.299	0.215	0.434		
Consumer satisfaction	0.722	0.610	0.458	0.463	0.465	0.494	0.306	

Assessment of structural model

This study has used the Smart PLS structural equation modeling (SEM) for assessing the proposed model. In figure 2 are shown the results of the SEM path analysis. The path measurement shows that convenience contributes with 0.121, variety seeking with -0.370, social influence with -01.67, advertising with -0.032, and product with -0.149 to online shopping behavior. Whereas online shopping behavior to consumer satisfaction R^2 is -0.278. The model shows that online shopping behavior variance is explained by 32%, whereas consumer satisfaction with 7,7%.

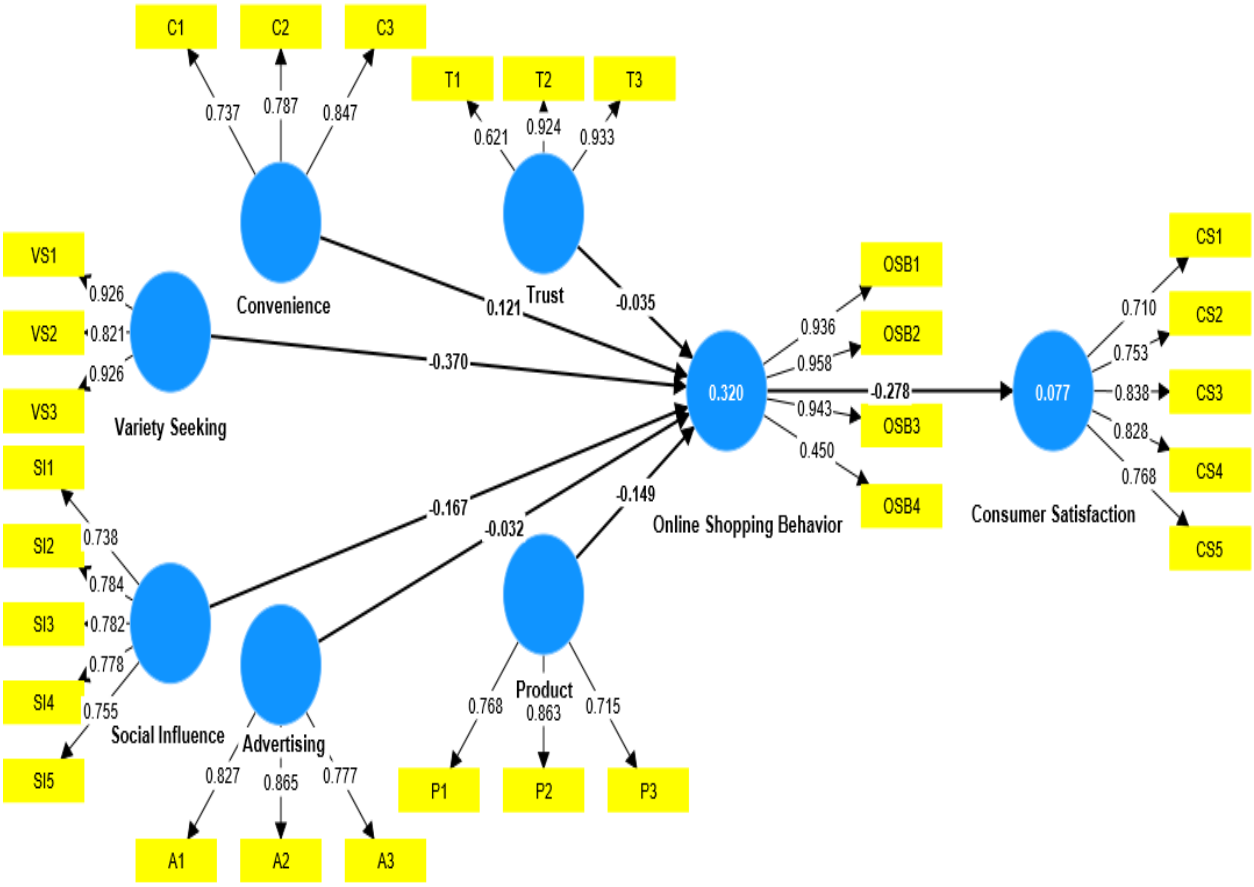

Figure 2. Structural Equation Modeling

The factor loading for all items in the construct is shown in table 5. The table shows that all items are 0.450 to 0.958. The outer loadings value should be higher than 0.70 and it should be considered for deletion if the removal of the indicator with outer loadings is between 0.40 and 0.70 if it contributes to an increase in composite reliability and average variance extracted (AVE) (Hair et al., 2017). The collinearity test is used to test whether the method is biased. According to Becker et al. (2015), the VIF value should be lower than 5 to consider significant, but the ideal value of VIF should be close to 3 or lower (Hair et al., 2017). Based on that threshold all the VIFs' from the collinearity test are equal to or lower than 5, and the model can be considered free of common method bias.

Table 5. Construct items loadings

Construct	Loadings	Mean	SDEV	VIF
Convenience (C)				
C1	0.737	4.64	0.730	1.325
C2	0.787	4.22	1.102	1.372
C3	0.847	4.21	1.050	1.446
Variety seeking (VS)				
VS1	0.926	3.76	1.427	3.190
VS2	0.821	3.75	1.196	1.777
VS3	0.926	3.83	1.447	3.335
Social Influence (SI)				
SI1	0.738	2.42	1.507	1.627
SI2	0.784	3.56	1.233	1.802
SI3	0.782	3.89	1.299	1.957
SI4	0.778	3.51	1.140	2.482
SI5	0.755	3.80	1.257	1.969
Advertising (A)				
A1	0.827	3.62	1.120	1.517
A2	0.865	3.54	0.878	1.975
A3	0.777	3.29	0.958	1.539
Trust				
T1	0.621	3.43	1.146	1.331
T2	0.924	3.40	1.083	2.620
T3	0.933	3.29	1.072	2.466
Product				
P1	0.768	4.01	1.064	1.224
P2	0.863	4.14	0.924	1.562
P3	0.715	4.18	0.794	1.525
Online shopping behavior (OSB)				
OSB1	0.936	3.41	1.443	3.262
OSB2	0.958	3.47	1.474	3.257
OSB3	0.943	3.58	1.457	3.134
OSB4	0.450	3.69	1.326	1.180
Consumer satisfaction (CS)				
CS1	0.710	4.09	0.864	1.662
CS2	0.753	3.81	1.013	1.526
CS3	0.838	4.13	0.909	2.102
CS4	0.828	4.13	0.948	2.715
CS5	0.768	4.36	0.840	2.299

Testing hypotheses

A multiple regression analysis with the SEM model has been used to investigate the relationship between antecedents with online shopping behavior and their effect on consumer satisfaction. Where antecedents of online shopping behavior were convenience, variety seeking, social influence, advertising, trust and, product, with SEM model, investigate their relationship with online shopping behavior, and the relationship of online shopping behavior with consumer satisfaction.

Table 5 shows that convenience has a positive significant relationship with online shopping behavior, variety seeking has a negative significant relationship with online shopping behavior also social influence has a negative significant relationship with online shopping behavior. Advertising and trust show that they don't have any significant relationship with online shopping behavior. But product features have a negative significant relationship with online shopping behavior. That shows that online shopping behavior has a negative significant relationship with consumer satisfaction. Based on that result from we can state that the online shopping behavior of rural consumers is affected

by convenience, but variety seeking social influence and, product negatively affect their online shopping behavior and their satisfaction isn't depended on their buying behavior. Therefore, based on these results, H4 and H5 are rejected, and H1, H2, H3, H6 and H7 are supported.

Table 6. Hypotheses testing

		Path Coefficient	STDEV	T values	P values	Results
H1	Convenience -> Online shopping behavior	0.121	0.053	2.289	0.022	Supported
H2	Variety seeking -> Online shopping behavior	-0.370	0.065	5.738	0.000	Supported
H3	Social influence -> Online shopping behavior	-0.167	0.066	2.553	0.011	Supported
H4	Advertising -> Online shopping behavior	-0.032	0.056	0.568	0.570	Rejected
H5	Trust -> Online shopping behavior	-0.035	0.049	0.704	0.481	Rejected
H6	Product -> Online shopping behavior	-0.149	0.058	2.584	0.010	Supported
H7	Online shopping behavior -> Consumer satisfaction	-0.278	0.056	4.992	0.000	Supported

Discussion

The purpose of this research is to assess the online shopping behavior of the rural consumer, to see how rural consumers engage in online shopping, since rural customers stay in villages and are not familiar with online shopping, what percentage of rural consumers engage in online transactions and how they feel about online shopping. Consumer satisfaction and demographic factors affecting shopping behavior have been studied a lot.

Therefore, this study has tried to investigate convenience, variety seeking, social influence, advertising, product and, trust as antecedents of online shopping behavior and their effect on consumer satisfaction.

The empirical results in this study show that rural consumers of Kosovo are used to do online purchases based on some factors. Factors that affect online shopping behavior in this consumer category are convenience, which supports other previous studies (Dang, et al., 2018; Davis, et al., 2021; Uzun & Poturak, 2014); variety seeking, which supports other previous studies (Kotler & Armstrong, 2012; Davis, et al.,2021) chance to try something different from their routine, and negatively affect online shopping behavior. Other factors affecting online shopping behavior in this study are social influence and products that support previous studies (Chitturi, 2007; Chernev, 2004; Davis, et al., 2021; Uzun & Poturak, 2014; Liu, et al., 2019). Finally, the study has also investigated the relationship between online shopping behavior and consumer satisfaction that support the previous studies (Davis, et al., 2021; Uzun & Poturak, 2014). So, study supports only five hypotheses and rejects two of them.

Conclusions

Online shopping has emerged as one of the most popular Internet applications. Online shopping has been shown to provide more satisfaction to modern consumers seeking convenience and speed. Nowadays the best way to purchase a product or service is through online shopping. Buying online now is routine and factors that affect rural consumers to buy online are convenience, variety seeking social influence and, product features, and these factors through online shopping behavior influence consumer satisfaction. Based on that we can state that they are familiar with online shopping they are satisfied with online shopping.

The paper provides some evidence to companies and business owners that rural consumers are increasingly buying online, allowing businesses and decision-makers to design the right online marketing strategies.

The study also contributes to digital marketing literature by providing scientific evidence for the behavior of rural consumers during online shopping. So far, no study has been found from an emerging country like Kosovo studying rural consumers' satisfaction with online shopping (Ismajli et al., 2022; Jashari & Rrustemi, 2017).

As any study in social science has their limitation, also this study has some limitations, one of that is common method bias. Also, another limitation might be a focus group for collection and analyzing only on the rural residents. Future research with the young population or in urban residences will give a more comprehensive conclusion for online consumer shopping behavior. Also, future research can focus on other indicators and can also trust and products be concluded as moderator factors in online shopping behavior.

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THE IMPACT OF TECHNOLOGY IN INSTITUTIONAL LANGUAGE ADVANCEMENT

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ABSTRACT

Since social media and technology permeate contemporary life, activism and environmental protection are hot topics in the digital era. Our news feeds are flooded with pictures of a damaged environment, reports about climate change and its negative repercussions are everywhere, and the necessity of protecting our natural environment, including its plants and animals, is a constant worry. Communities that have a better grasp of the effects of industrialization and rapid development are more sensitive to environmentalist views and are embracing cleaner living and ethical behaviors. As a result of this, in perspective over the last few decades, language preservation should be included under the preservation umbrella in order to reach a wider audience. The challenges surrounding language preservation advancements will be discussed in this paper.

Keywords: *language, technology, preservation, institutions, culture.*

INTRODUCTION

In order to promote education and entertainment in all languages of the globe, Language Preservation Technologies ("LPT") was established as a non-profit organization for the development of language technologies. In addition to creating cutting-edge products like multilingual television subtitling for the majority of languages, LPT also builds custom automation for text and about voice voice too, by permanently preserving all elements of these languages and making them appealing and making them accessible for such things as subtitles, voice replacement, games, etc. This helps preserve and support indigenous languages.

The technology focuses on fostering language immersion and offers a wide range of tools for adults and teenagers, bridging generational gaps to support and preserve already-existing languages as well as bring back languages that are on the verge of extinction.

The three main custom language and speech technologies required for language preservation, along with a variety of bespoke software for language revitalization, are created by LPT in collaboration with consortiums when voice technology is not yet available for a language. Time is of the essence and the level of global urgency demands that we act immediately.

The Elder Voices project, an interactive activity that involves documenting and directly preserving history through filming tribe elders, is a part of the preservation process.

INTERNET AND LANGUAGE

There are 35 distinct languages used to write more than 99% of the information on the internet. Since the remaining 6,000 or so languages are confined to a small portion of the internet, digitalization is essential to language preservation as the internet grows more and more pervasive in modern life. It's important to consider how these efforts can support language revitalization because the National Endowment for the Humanities has awarded various grants for a large number of projects to digitize many indigenous languages all around the world, including Native American languages.

English is the most prevalent language on the internet, making up more than 62% of all written content. Spanish and Russian are the next most popular languages, with 5.9% and 3.7% . While English is spoken by about 18% of the world's population, Mandarin Chinese, which is spoken by around 14% of the world's population, makes up 1.4% of the content on the internet. These statistics are by no means an exact representation of how broadly each language is spoken.

Because of the prevalence of English (and a few other languages, including Persian), many others are underrepresented. This is especially true of less widely spoken languages that have fewer available resources. Because of the internet's central role in modern information consumption, it may shorten the life of a language that is already in risk of dying out.

Reviving a language was far harder before the advent of the internet and computers (which is saying something, given that it's still not simple now). Before the advent of digital tools, efforts to revitalize a language often involved linguists spending significant time in contact with the few remaining native speakers to compile written materials like dictionaries and grammars.
Although linguists must still put in equally arduous and time-consuming work, keeping the linguistic information online frees up space and makes resources more readily available. It is now much simpler for scholars and language communities to exchange knowledge about the language.

PRESERVING LANGUAGES

Modern academics are concerned about the worldwide loss of linguistic variety, and they often reference the language surrounding biodiversity to illustrate their points. Many people have drawn direct parallels between the reported mass abandonment of languages and the extinction of a biological species, each of which losses would be devastating to humanity. This is done in light of a long-standing trend in linguistics dating back to Franz Bopp that compares languages to organisms (Crystal 2000). In recent professional articles on language extinction, cosmopolitan concerns about the decline in human knowledge anticipated by some linguists as a result of language loss have emerged as another major issue (Nettle & Romaine 2000). Popular Whorfianism suggests that the loss of linguistic diversity is linked to the eradication of intellectual heritage because each language reflects a distinct world view and culture complex, reflecting the way in which a speech community has formed its thinking and its understanding of the world (Wurm 1999). From this angle, language loss also denotes a progressive loss of a complete human worldview. The usage of metaphors like "endangered languages" or "language death," according to other scholars, likens languages to beings with agency and tends to conceal the sociocultural processes that ultimately account for language maintenance and loss (Gal 1996). The disconnect between professional discourses and local concerns regarding language revival is a result of the emphasis on languages as quasi-organisms. While cosmopolitan, popular Whorfian, and quasi-ecological concerns have been combined in expert discourses aimed at Western reading publics and funding agencies (Hill 2002), these justifications for language revitalization are much less prominent in the contexts of actual pro-minority language activism. In other words, several responses to the question "Why bother?" have been provided by academics and local activists.

Until recently, unless the information was memorized by succeeding generations, a people's record of their traditions, culture, and very perspective on the world expired with the eldest member of the community.

This dilemma could not be resolved even with the use of a written record (Villa, 2002). Writing down a story does not adequately convey the language abilities or the expertise with which excellent storytellers transmit cultural heritage.

The development of new technology, however, removed that restriction. The invention of Edison's phonograph towards the close of the 19th century made it possible to record sound, making it potentially viable to preserve oral traditions and languages. So that their lives and their memories did not end with their death, an older generation's voices could still be heard, as many times as one desired.

The new technologies were not, and still are not, infallible and unbreakable. For instance, some of the early linguists employed magnetic recording devices, which are now extinct but for perhaps in museums. While some of the oldest recordings were produced on magnetized steel wire, the recording medium has also lost its usefulness. Even if a device that can play the original recordings can be located, some of the magnetic coatings are so delicate that using them could cause the recording to be lost.

Thanks to technological advancements, it is now possible to record ancestors' voices in a quick and low-cost manner. It used to be challenging and expensive to permanently capture a voice, but that is no longer the case (Villa, 2002). Because of how swiftly computer design has developed, it is now possible to buy a system for maintaining languages at a reasonable price. Yet, in order to use and execute recording and digital storage technologies, people who can work with the appropriate hardware, software, and other essential elements of these electronic breakthroughs and who are aware of the linguistic challenges they provide are needed.

LANGUAGE, EDUCATION AND TECHNOLOGY

Due to their role in fostering student engagement and promoting effective language learning outcomes, educational technology tools are very appealing to language instructors. At today's educational institutions, the ability to use technology is regarded as a vital requirement. It's now an essential part of education both in and out of the classroom.

Technology used in modern language teaching and learning, such as language labs, digitalization, multimedia devices, mobile phones, audio/visual multimedia content, EdTech solutions, and social media, can help students advance their language skills more quickly and thoroughly. Multimedia content might include print texts, video, games, and the internet in a way to help each student become comfortable with linguistic vocabulary and structure.

Flexible classroom environments enable the combination of individual, small-group, and, at times whole-class learning that can be seen as vital to students' success. These settings are characterized by the interweaving of linked devices, audiovisual tools, and functional furniture (EdTech staff, 2018).

Traditional methods of teaching languages tend to make students feel passive and get bored easily, but modern methods of teaching languages make use of multimedia, a variety of resources, and educational games to provide students with meaningful opportunities in order to increase the needed exposure to the target language and thus making their own knowledge of it.

Teachers now have the means to bring more of what we witness of the outside world into their classroom through the use of videos, photographs, and software applications. Students are more likely to put their theoretical knowledge into practice and deepen their interest in the language when it is applied to authentic contexts.

Students can interact with native speakers and other language students of varying ability levels in and out of the classroom thanks to technological advancements. Because to the proliferation of digital tools, mastering a new language is now within everyone's reach.

Utilizing gadgets with language-practice capabilities, including voice recognition as well as interactive multimedia activities, can stimulate students to become active language learners who are enthusiastic about the process and willing to devote more time and effort to their language studies.

There is a lot more leeway for students to study the language in whichever way they see fit, and to acquire the language at any time and any place outside of class. More in-depth and fulfilling linguistic immersion is achieved when the learner exercises autonomy and takes responsibility for their actions.

One of the most important first steps in learning a language is mastering the pronunciation of new words and phrases. Students might be given thorough instructions on how to use their tongue and jaw to generate a particular sound by watching instructional videos, which could be displayed to them. With the use of speech recognition technology, students may accurately pronounce common words and expressions while receiving personalized feedback and score to ensure they are making the right sounds.

Software solutions can match together students for spoken engagement and improve communication in addition to enabling solo practice. As a result, teachers may better manage language classes and provide students more time for speaking and active learning.

To help L2 learners develop their listening abilities, teachers might use a variety of graded listening materials. Based on what the students have already learned and their interests, a variety of websites and authentic listening materials, such as TED speeches and news broadcasts, could be used. Even though students are studying the same subject, they might each have a wholly unique learning experience.

The ability to master fundamentals, language, and higher-order thinking skills are prerequisites for reading comprehension. Instructors can choose from a variety of resources, including those for vocabulary development and exam preparation, to gradually increase their pupils' reading comprehension. Software programs track students' progress, enabling them to better understand their areas of strength and weakness. As a result, they can receive reading materials that are specifically designed to help them improve their deficiencies.

Software for language learning may help students organize their material, brainstorm ideas, and visualize concepts. Students' typing is automatically checked for spelling using tools, which makes it simple to find and

swiftly correct mistakes. Students can use blogs to express themselves better in their own writing or to conduct peer reviews on shared writing drafts. To develop kids' writing abilities, it is effective to use all program options.

INSTITUTIONAL APPROACH

While educational possibilities can be crucial for young people's success in contemporary society, it is also crucial that local languages, as well as their community's identity and cultural values, are preserved. According to Joshua A. Fishman, a pioneer in the field of language revitalization, people maintain their languages far beyond what might be expected, not always because they are useful in their daily lives but rather because they hold significance as a symbol of identity and a key to their continued existence as a people (Hinton, 2011). When linguists feel unable to do so, museums, libraries, and archives have a great deal of potential to foster this "language loyalty" and restore a sense of pride and identification in home languages as keepers of cultural knowledge and institutions of public service (Hinton, 2011).

Languages are essential components of complex ecologies that must be fostered if global biodiversity is to be maintained, according to linguist Suzanne Romaine (2007), who says this succinctly. In the larger effort to protect cultural history, knowledge, and identity—all of which are ideally recognized by museums—preserving languages is a crucial component. Museums have an intrinsic responsibility to preserve and promote both tangible and intangible cultural heritage as public stewards serving their local communities.

At least 43% of the probable 6,000 languages that can be spoken worldwide, according to the UNESCO Atlas of the World's Languages in Peril, are in danger. This number is probably low because there are numerous languages for which there is not enough information to determine their risk..

CONCLUSION

There has been a rise in the usage of artificial intelligence (AI) for language acquisition, and major tech firms are pouring resources into developing AI-powered language learning systems with human-like conversational interfaces. But even with these advances, Eric Schmidt, a former executive chairman of Google, has said that AI is biased towards languages that are not commonly spoken. In addition to a diminishing native speaker population, endangered languages face threats from technical systems that favor the world's most frequently spoken languages.

Several efforts are being made to analyze and catalogue audio recordings of extinct Indigenous languages using artificial intelligence (AI). At the ARC Centre of Excellence for the Dynamics of Language (CoEDL), there is a striving to conserve and record endangered languages. Using traditional methods, transcribing all of the audio in CoEDL's collection would take about two million hours. To solve this problem, in 2017, CoEDL and Google joined forces to develop machine learning technologies to analyze the audio files. To date, this information has been used to train AI systems to understand 12 Indigenous Australian languages.

While exponential technologies like AI and others present opportunities for language preservation, they also bring with them intrinsic challenges. Many Indigenous languages are based on oral history and are therefore not written down. The act of committing these languages to paper could alter them or leave out essential details.

The very process of removing them from their contexts and cultures would certainly lead to a loss of significance. In addition to the written word, there are many other ways to communicate effectively in any given language. The tone of voice, expressions on the speaker's face, surrounding circumstances, and other factors all play a role in shaping the meaning of a message. While capturing endangered languages and using those recordings to train AI tools is important, it may not be sufficient for the preservation and revitalization of endangered tongues. Indigenous languages have managed to preserve an enormous amount of information and culture, but all of this can be lost if we fail to accept the fact that language is not just a set of letters and sounds.

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International Cartels Logic and Cases

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ABSTRACT

This article gives a general overview of cartels. The development of cartels started in the late 19th century. During this period large businesses emerged and this marked the official beginning of the contemporary cartel movement. The typical story of cartels may not be one of their rise and fall, but rather of their growth, boom, collapse, rebirth, steady decline, and eventual criminality. But up until the 1980s, cartels were a necessary part of the global story of big business, not their absence. They had an impact on organizational change, corporate strategy, and technical advancement. Regarding cartels just as a "conspiracy against the public" sidesteps a number of crucial issues and obscures the vast differences in the goals, forms, and services offered by cartels.

Keywords
Cartels, types of cartels, international cartels.

Introduction what are cartels?

A cartel refers to an agreement between two or more independent firms who collude to control the terms of business in a particular market (Dick 1996). Cartels are formal or informal agreements, national or international organizations, of manufacturers or traders, designed to reduce or suppress competition in a particular market. Cartels control production and distribution. The main activities in which they engage are: fixing prices, limiting supply, dividing markets, fixing quotas for sale or manufacture, and pooling profits among member firms. Although some state-sponsored cartels are considered acceptable, such as OPEC in the export of oil or DeBeers in the diamond industry (Gupta et al 2010), illegal private cartels between companies have been seen operating on a variety of worldwide markets, including those for metals, vitamins, chemicals, semiconductors, chemicals for air travel, textiles, graphite electrodes, synthetic rubber, and semiconductors. Graham and Richardson (1997) noted, "While competition is familiar to most, few reflect deeply on cooperation. Almost all market competitors are firms—business organizations (social groupings) that are, for the most part, internally cooperative, not competitive."

Cartels originated in Germany during the 1870s conceding with the growth of this country. Many analysts believe that the successful operation of cartels was responsible for German aggression, which led to two world wars. During World War I the government of Germany utilized domestic cartels to produce armaments and other materials. In the next two decades, German firms continued to cooperate with each other in order to control production. One of the most important was I. G. Farbenindustrie, which produced chemicals and dyestuffs. By the outset of World War II, in Germany, all industry was controlled by cartels, supervised, and encouraged by the government. Cartels are primarily employed for:

- ✓ **Central Sales Control**. In this case, the members of the cartel define and specify prices and sales conditions, maximum total sales, and quotas. Moreover, they determine standards for the quality or distribution of goods within limited territories.

- ✓ **Central Purchase Control.** Are agreements between buyers joined in a central agency or purchase company, which acts only after consulting with all the members of the group? The purpose is to keep the price down.
- ✓ **Production Control.** This agreement consists of restrictions on production directly or indirectly. An indirect restriction of production is for instance the fixing of prices at a defined level. While a direct restriction is realized by determining production quotas, by pooling agreements to limit production in a specified amount. In the cases when the quantity produced will exceed the specified or fixed quantity, the production will be suspended. Moreover, this kind of agreement consists of the setting of standards for the quality of production.
- ✓ **Control of Territorial Market**. Consists in the division of markets among different partners simply by agreements, patent licenses, or trademark licenses. The first kind of agreement involves the restriction of production to the quantity, which every partner can sell in the market assigned to him. The second consists of the giving of patent licenses by the members of a firm in a particular country. And finally, the division of the market may be realized by using trademark licenses. American law prohibits the licensing of trademarks but this can be done in a number of other countries.

Types of Cartels

There are several types of cartels that operate in a way or another.

Domestic Cartels*:* a way for companies to limit market access for foreign firms. In general domestic cartels are considered to restrain trade and are illegal, but participation in international cartels is not sanctioned.

Import Cartels: defensive responses by companies that purchase the goods of export cartels. An import cartel is formed when all the rival companies while importing a given product cooperate. An Import cartel may be used as a protectionist trade policy tool to limit imports. Moreover, cartels may be used as a device to manage demand and the price of crucial inputs, such as resource commodities. The motivation of members of an import cartel is to shape the price and quantity of imports. However, the import cartel results in distorted and higher relative prices of imports. Consequently, the cartel inflicts production and consumption inefficiencies, which low the social welfare in the economy

Export Cartels: An agreement between firms on export prices, division of markets or any other group action in foreign markets. Most governments of industrial and developing countries encourage export cartels because they are viewed as important in building international sales. Developing countries see export cartels as a mechanism for development. We think to focus my intention on export cartels because they are increasingly coming to be viewed as an instrument of strategic trade policy. Export cartels vary in terms of their scope and constituency. So they are categorized as follows:

Pure Export Cartels are directed exclusively at foreign markets. Vs. **Mixed export cartels**, restrain competition in the exporting country's home market as well as in foreign markets.

National Export Cartels include suppliers only from one country. Vs. **International export cartels**, which include producers from several countries.

Private Export Cartels involve private agreements but the best-known export cartels have resulted among national governments.

Moreover, export cartels can be categorized in:

Resource Cartels. The formation of such cartels depends on the proportion of location and the abundance of factor endowments that a country has. In principle, resource goods are traded in perfectly competitive markets in which individual firms have no significant influence on price. Over the years, there have been many attempts to form export cartels in resource products such as coffee, oil, bauxite products, phosphate, tin, copper, iron, tea, bananas, natural rubber, nickel, pepper, cobalt, etc. The average life of a multi-country resource sector cartel is relatively short. Some cartels have enjoyed success: oil, phosphates, and coffee, but others faltered rapidly: bananas, bauxite, copper, and tin.

Export Cartels in Manufactured and Technology Goods. Manufactured products and technology goods are commonly traded in imperfectly competitive markets, which provide firms with greater opportunities to shape the price of their products. The manufactured or technology product requires a substantial investment in R&D or other fixed costs, and moreover, needs know-how and expertise.

The Logic of Cartels

Cartels have the possibility to create super-normal profits in international markets. Cartels are created under some conditions. First, the demand for the product must be relatively insensitive to price changes, i.e. inelastic. Second, the supply of the product must also be relatively intensive to price changes. Differences in the height of entry barriers (as we discussed above), the degree of market transparency, product homogeneity, frequency of interaction, and business cycle sensitivity render some industries more vulnerable to cartelization (Hellwig & Hüschelrath, 2017). In order to create effective and successful cartels members must be able: to reach an agreement, collude with each other, detect breaches of the agreement, and punish firms that breach. Collusion is when firms in a market coordinate their behavior for the purpose of producing a supra-competitive outcome (Harrington Jr, 2017). The degree to which enterprises internalize the effect of their production and pricing choices on the sector's output and price level is impacted by collusion. Enforcement is a crucial aspect of cartels because cartel members have the incentive to cheat by selling or producing more than the quantity assigned or with lower prices. In a few words, if legal provisions do not maintain the cartel, there is a constant threat to its existence as each participant tries to maximize its profits. The ability of a cartel to punish is essential because courts will not remedy the breach of an illegal contract. The scope for gains in a cartel is greatest when the cartel controls much of the world’s production, when there is little ability on the part of consumers to switch away from the product, and when alternative sources of supply are difficult to develop. Maphwanya (2017), studies a sample of 28 detected cartels between 1999 and 2012 and finds that more than 50% of the cartels involved five or fewer members.

Cartels can affect customers by limiting competition and driving up costs, which is why they are frequently viewed as unlawful and anti-competitive in many nations. Many countries permit and support cartels when they are in the public interest. ***Defenders*** claimed that cartels stabilize markets, reduce costs of production, eliminate high tariffs, distribute profits equitably, and benefit the consumer. On the other hand, those who ***object*** to cartels point out that prices are higher and output is lower when firms do not engage in competition. Today their disadvantages

are considered to outweigh their advantages; legal barriers often restrict the development of new cartels.

Regarding Albania, it would depend on the particular setting and sector. There may be examples of cartel-like behavior or anti-competitive activities in some businesses, despite the fact that cartels are typically detested and regulated in most nations, including Albania. According to Albania's Competition Law, the government agency in charge of upholding the law and looking into anti-competitive behavior, such as cartels, is the Competition Authority.

Case study Widget Manufacturing Cartel

The Manufacturing of Widgets Cartel was a collection of five businesses that produced and distributed widgets to customers all over the world. These businesses—Company A, Company B, Company C, Company D, and Company E—were prominent participants in the widget industry, and they collectively held a considerable portion of the world's production.

Establishment of the Cartel. Following informal discussions and agreements, the executives of the five corporations decided to join a cartel in order to boost their earnings and market dominance. They banded together in order to stifle competition among themselves and pursue anti-competitive behavior. To end competition and increase profits, the cartel decided to regulate prices, restrict production, and divide market shares among its members.

The Widget Manufacturing Cartel maintained its anti-competitive pact by operating clandestinely, conducting secret meetings, and engaging in criminal activities. To maintain their cartel agreement, they took a number of actions, including communicating confidential business information, keeping tabs on one other's output levels, and enforcing sanctions against violators.

The Cartel's effects. The widget market and consumers suffered a number of consequences as a result of the cartel's anti-competitive actions. The cartel was able to maintain artificially high widget prices by setting prices and restricting production, which increased expenses for consumers. Due to the cartel's anti-competitive actions, other potential competitors were unable to enter the market, which decreased customer choice and hampered innovation.

Discovery and Legal Actions: The Widget Manufacturing Cartel was identified and was subject to legal repercussions following a thorough investigation by the competition authorities. The member companies received large fines from the competition authorities for their anti-competitive actions, and the executives implicated were charged with crimes for their involvement in the cartel. Millions of dollars in fines were imposed on the firms, and the CEOs might go to jail. The Widget Manufacturing Cartel was broken up as a result of the legal activities, and the member companies suffered major monetary and reputational damages. The fines and legal repercussions functioned as a disincentive for further anti-competitive behavior, increasing market competition that benefited consumers and encouraged innovation.

The Widget Manufacturing Cartel case serves as a stark reminder of the serious repercussions of engaging in anti-competitive behavior, such as the formation of cartels, including monetary fines, legal actions, and reputational harm. In order to safeguard consumers and advance fair competition in the market, it also emphasizes the significance of competition laws and regulatory authorities in spotting and combating cartels and other anti-competitive actions. Businesses must adhere to competition rules and be aware of the legal and financial repercussions of participating in cartels or engaging in other anti-competitive activities.

De Beers Consolidated Mines the Diamond Cartel

The well-known diamond mining and trade corporation De Beers is headquartered in South Africa. De Beers has a reputation for exerting cartel-like control over the world diamond market, despite the fact that neither the corporation nor the courts have ever used the word "cartel" in connection with De Beers. An outline of the so-called "De Beers cartel" is given below:

Background: Cecil Rhodes formed De Beers in the late 19th century, and the company made a substantial contribution to the global diamond industry, particularly in the South African diamond mines. De Beers eventually gained control over a sizeable share of the world's diamond production, which helped it establish a monopoly in the diamond industry. About 65% of trade in rough diamonds is controlled by De Beers, through mines in South Africa, Botswana, Namibia, and Tanzania. The control that De Beers has over the diamond business has raised antitrust concerns in the U.S. since 1945, and the company still faces an indictment brought by the Justice Department in 1994. De Beers executives say that they cannot travel to the United States without risking arrest.

De Beers Consolidated Mines is an effective cartel in the diamond industry. Most of the major producers belong to a marketing cartel formed to maintain the price of diamonds at a high level. De Beers maintained its dominant position in the industry by using its numerous worldwide companies to buy up new sources of diamonds, control the distribution of industrial diamonds, and the production of synthetic diamonds. De Beers is an effective cartel because it controls production, dominates trade, and influences demand (by spending millions every year on advertising).

The "De Beers Cartel" was established because De Beers reportedly used anti-competitive tactics to retain its hegemony in the diamond industry. Early in the 20th century, De Beers employed a tactic known as the "single-channel monopoly," in which it took control of the whole diamond supply chain from mining to distribution. De Beers accomplished this through a number of strategies, including developing global networks of distributors and purchasers, buying diamond mines, and forming strategic agreements with other diamond producers.

Operation of the "De Beers Cartel": It's well documented that De Beers used strategies like price fixing, market allocation, and production control to rig the supply and demand of diamonds and keep prices high.

De Beers was accused of manipulating the supply of diamonds by hoarding vast amounts of them and releasing them gradually into the market to keep prices stable. Additionally, they entered into exclusive agreements with diamond buyers, preventing them from purchasing from other vendors and keeping control of the diamond distribution network.

Impact of the "De Beers Cartel": The "De Beers cartel's actions have been criticized for manipulating the diamond market and inflating prices artificially, but supporters of the group counter that De Beers has helped the diamond industry stay stable and expand.

Legal Actions and Changes: Over the years, De Beers has been involved in legal disputes involving anti-competitive behavior, primarily in the United States. De Beers and the U.S. Federal Trade Commission (FTC) settled claims of price fixing and anti-competitive behavior in 2004. De Beers agreed to stop purchasing diamonds from particular mines as part of the settlement to allay worries about anti-competitive behavior.

In the years thereafter, De Beers has worked to increase transparency and make changes to its business operations, abandoning the "single-channel monopoly" approach.

In conclusion, the "De Beers cartel" has long been the subject of discussion and judicial scrutiny in the diamond industry. The word "cartel" is not used by De Beers or in judicial processes involving the corporation, despite the fact that De Beers has been the target of legal actions and altered its business methods. However, the past actions connected to the "De Beers cartel" have sparked worries about anti-competitive behavior in the diamond business and have emphasized the significance of competition laws and regulatory scrutiny to promote fair competition and safeguard consumer interests.

The Organization of Petroleum Exporting Countries (OPEC)

OPEC is an international organization concerned with coordinating the crude-oil policies of its member states. Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela are the five oil-producing nations that created the international corporation in 1960. OPEC has 11 members – Algeria, Indonesia, Iraq, Iran, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela. OPEC headquarters is located in Vienna, Austria. In the late 1950s, the amount of oil produced worldwide was greater than the demand. As a result, the price of oil, which was controlled by the oil companies, dropped, and with it dropped the amount of money the oil companies paid to the oil-producing nations. In reaction of this situation was formed OPEC. During the 1970s, the oil supplies in non-OPEC countries were reduced, and the organization raised the price of oil. Moreover, OPEC sets production ceilings, specifying the quantity of the oil that each member country may produce. In the 1980s some OPEC nations ignored the production ceiling and this resulted in overproduction and a drop in oil prices. OPEC has also used the supply of oil as a political tactic, for example, stopping the delivery of oil to nations supporting Israel in the Arab-Israeli War of 1973.

The main goal of OPEC is to coordinate and harmonize national petroleum policies in order to maintain stable oil prices on the world market while safeguarding member nations' economic interests.

OPEC has recently encountered a number of difficulties and chances that have influenced its operations and had an impact on the world oil market. Let's examine some crucial components of OPEC's case study in more detail:

Oil Price Volatility: The fluctuating price of oil has been one of OPEC's biggest problems. For OPEC members as well as for the global economy, changes in oil prices can have enormous geopolitical and economic repercussions. Through production quotas and agreements among its members to control oil production and stable prices, OPEC has attempted to control oil prices. For instance, OPEC and non-OPEC producers agreed to reduce oil output in 2016 in an effort to stabilize prices, which had fallen due to an excess of supply. However, because different nations have diverse economic and political interests, maintaining output limits and gaining agreement among member countries has occasionally proven to be difficult.

Geopolitical Dynamics: In addition to its member countries, other significant oil-producing countries also have an impact on the functioning of OPEC. Geopolitical concerns, such as Middle East conflicts, sanctions against specific OPEC members, and political disagreements within member nations, can affect oil supply and prices. For instance, the capacity of OPEC to agree on production limits and other policy decisions has recently been hampered by conflicts between certain of its members, such as Saudi Arabia and Iran. Relationships between OPEC and non-member nations like the US, Russia, and China, which have a big impact on the world oil market, are also influenced by geopolitical factors.

Climate Change and Technological Advancements: OPEC's activities have been impacted by technological developments in the energy sector, such as the creation of shale oil and renewable energy sources. The surge in shale oil production in the United States has lowered oil prices by increasing the quantity of oil on the market and complicating OPEC's efforts to control prices through output quotas. Concerns about the long-term demand for oil have also been raised by the growing worldwide attention on climate change and the shift to renewable energy sources, which may have an effect on OPEC's market share and earnings. OPEC has taken action to diversify its revenue sources and invest in renewable energy technology in response to the need to adapt to shifting energy landscapes.

Market Share and Revenue: Market share is a crucial factor in the strategies of OPEC member nations because they significantly rely on oil exports for their economic profits. In the past, OPEC sought to keep a sizeable portion of the global oil market in order to guarantee steady income for its member nations. However, OPEC has struggled to hold onto its market share due to escalating competition from non-member nations, technological developments, and shifting international energy regulations. To increase their revenue streams, OPEC has responded by imposing output quotas, market diversification initiatives, and investments in downstream operations like refining and petrochemicals.

OPEC still has a substantial impact on the world oil market despite the difficulties and possibilities it faces. Through production limits, agreements, and diversification initiatives, the organization has attempted to address challenges connected to oil price volatility, geopolitical dynamics, technological improvements, and market share. OPEC will probably continue to modify its policies as the global demand for oil changes and the energy landscape changes.

Conclusions

Unexpectedly, cartels are a touchy subject. Although cartel dynamics are not a mystery, they are insufficient to explain any specific organization. The volume of research to date has an emphasis on why cartels fall apart rather than their enduring power. More study of cartel internal organizational dynamics that incorporates political, organizational, and economic theory is required.

The rise and fall of cartels serve as a reminder that international trade and collaboration are absolutely necessary for a flexible division of labor based on comparative advantage and competition. Given the experience of the 20th century, when increasing nationalism distorted international markets and frequently forced businesses to cooperate to survive, economic cooperation among businesses was gradually eliminated thanks to international collaboration. Because of the fierce competition that constrained the market's size, cartels emerged as a disappointing but probably sensible second-best solution.

The intriguing question of whether competition is crucial for effectiveness and creativity is finally raised by the study of cartels. The cartel dilemma draws attention to difficult-to-resolve conflicts between the costs of capitalism's stop-go, boom-and-bust instability and the advantages of moderate stability and risk management, between price and quality, between consumers and producers. One place to think about when and how cooperation might be effective and inventive is through cartels.

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Cases of exemption from criminal liability according to the criminal code

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ABSTRACT

This paper analyzes the institute of insanity, incapacity because of a mental disorder, as one of the main causes of exemption from criminal liability, in order to present a more comprehensive configuration of this institute.The institute of insanity presents sufficient interest, as much as unclear points. The uncertainty that characterizes the field, the fact that different thesis and orientations are radically at odds with each other, necessarily requires reflection, grounding and continuous proposals from the doctrine and practice as well. There are numerous uncertainties, especially those dealing with the impeachment of insane subjects and their final legal treatment. In terms of risks, we are dealing with an area where criminal law, inevitably, interacts with other disciplines (psychiatry), due to which lawyers must be careful not to infringe balances already established from both criminal and forensic sciences in solving cases of exemption from criminal liability because of a mental disorder.

The following paper tries to give an overview of the different orientations that characterize the problem in question, to underline the conclusions achieved from the jurisprudence, to reason not only on the basis of the effective normative, but also on the basis of perspective and the capacity of reformation, seeking to develop points of reflection and also to avoid unreasonable controversies. The main issue, as well as the most controversial one, deals with the question: What does insanity mean and whom it serves?

Key words: mental capacity, insanity, legal criterion, diminished mental capacity, medical measures, forensic expertise.

Liability according to the criminal code

Criminal law is part of public law, as long as the goods and rights it protects are attributed to individuals (life, property, morality and dignity, etc.) and as long as they are protected by the state from the point of view of a common and collective interest. Criminal law calls facts criminal offenses and perpetrators subjects. The facts belong to human behavior and the legally important consequence, while the subjects are the persons who commit these facts[1]. Therefore, the basis of criminal responsibility consists of the set of objective and subjective elements provided for in the criminal legislation, sufficient for the person to be held criminally responsible. Criminal liability arises from the moment of committing the criminal offense and ends or ceases when the legal relations between the subjects, the state and the defendant also cease. In terms of criminal responsibility, the fact that it is only individual is very important. Criminal liability ends when the specified term of serving the sentence passes, implementing educational measures, due to the change of circumstances, with the prescription of the criminal offense, amnesty and forgiveness[2]. The commission of a criminal offense means the application of punishment or other measures to its author, as a necessary reaction of society and the state to the damage caused or the endangering

[1]I. Elezi, S. Kaçupi, M. Haxhia "*Comentary on the Criminal Code 2001. Pagei .12* ",
[2] Shefqet Muçi "*Criminal law part*", 2007, p. 93.

of protected values, as a result of violating the norms of the legal order. In order for the punishment to be applied, it is necessary for the perpetrator to be responsible for the committed crime, i.e. to have a certain psychic relationship with the committed crime as its author. Therefore, for the implementation of the punishment, it is necessary that, in addition to the existence of the criminal offense, the criminal responsibility of the author of the offense also exists. From this it can be concluded that the existence of criminal liability is a necessary condition for determining the punishment for the perpetrator of the criminal offense.

According to this worldview, criminal liability consists of two elements:

1. Guilt and mental capacity (subjective element) 2. Criminal offense (objective element)

Criminal liability really presupposes the existence of a criminal offense, because the problem of determining criminal liability arises after a socially dangerous and illegal offense has been committed, which is defined by law as a criminal offense for which punishment is provided. Without the existence of a criminal offense, the issue of criminal responsibility cannot be raised. This fact shows that criminal responsibility can be viewed from an objective-subjective point of view.

In the theory of criminal law, we can also come across such opinions according to which the central institute of this field is the "real" culprit, while criminal responsibility represents only the finding, the determination that an individual fulfills the conditions for guilt. Criminal responsibility is thus only a consequence of the commission of a criminal offense, as legal-civil liability is only a consequence of the commission of a legal-civil delict or a civil delict (causing damage). So, criminal responsibility is only a technical term which indicates that an individual has committed a criminal offense and that he is responsible for that offense. This means that the notion of criminal responsibility has only a declarative and non-essential character[3].

Criminal responsibility is nothing but the obligation of the author of the criminal offense to submit to legal requirements and the punishment assigned to him for the criminal offense committed. It is related to the person's responsibility, that is, to the ability to understand his behavior. On the other hand, its birth obliges the competent bodies to start criminal proceedings, in accordance with the rules provided in the Code of Criminal Procedure, in order to materialize this responsibility. In the essential aspect, the basis of criminal responsibility is the criminal offense, within which the social dangerousness of the criminal action or inaction is expressed. Knowing and applying the principles and requirements of criminal responsibility is in itself the application of the principle of legality. Criminal liability does not apply to minors who have not reached the age provided by law, to persons who are irresponsible due to their mental state and in the case of other circumstances that lead to exemption from criminal liability.

Two of the main elements of the picture of the criminal offense that bring criminal responsibility are the subject, with its characteristics, specifically, the age for criminal responsibility and responsibility, as well as the subjective side, with guilt, motives and purpose. The subject is a necessary element of the criminal offense, by which is understood the person who committed the criminal offense and who will be responsible for its commission, but to be criminally responsible as the author of the criminal offense must maintain two qualities, age and be responsible. The age criterion is provided by the legislator as a condition for having awareness and the ability to judge and distinguish between good and bad. The age of criminal responsibility is related to the time of

[3] Yes there.

the commission of the crime or criminal misdemeanor and not to the age of initiation of the proceedings. This is important for holding the person criminally responsible and for determining the punishment. In addition to age, a necessary feature of the subject of the criminal offense is responsibility, which consists in the person's ability to understand and control his behavior and the consequences[4].

Cases of exemption from criminal liability

In our Criminal Code, the exemption from criminal liability is provided in 10 articles, starting with age, causation, guilt and irresponsibility due to mental state, necessary protection, extreme need, etc. Referring to the legislator's provision on the two main conditions for taking criminal responsibility, namely age and responsibility due to mental state, the subjects that are subject to criminal law can be identified. The age for taking criminal responsibility has to do with the time in which the subject manages to understand the importance of actions and omissions and at the same time manages to control them, to understand that he is committing a criminal offense. Age determination is directly related to the understanding of illegal action and socially dangerous behavior. In the same vein, irresponsibility due to mental state also follows, given that the person affected by a mental disorder at the time of committing the criminal offense did not have what is legally known as the ability to understand actions and inactions and to wish the arrival of the consequence.

The conditions of the development of the society make it possible for the person who has reached the age of 14 at the time of committing the criminal offense to have acquired sufficient knowledge and to understand what is good and bad, and consequently also what is a crime and what is not . Meanwhile, the person affected by a mental disorder does not perceive the reality and therefore the illegal action, at any moment of his life. There are hypotheses for exemption from criminal liability. The law provides that the subject cannot be held criminally responsible whenever he suffers from mental disorders and pathological intoxication, such as to completely or partially disrupt the ability to understand actions and to desire the consequences. For minors under 14 years of age, there is an absolute presumption of exemption from criminal liability[5].
This list of reasons for exemption from criminal responsibility is not taxing in nature, but is limited to predicting some hypotheses. It is not a question of reasons for automatic exemption from criminal liability, but of case-by-case verification[6]. What is important in our paper is the legislator's assessment of mental disorder, the general definition within which different causes are foreseen, each with its own importance. Regarding the definition of mental disorder, Marini identifies it as "any change in intellectual or volitional ability, or both, encountered in the subject"[7].
This mental state is not necessarily permanent, but can also be a transitory state. On the other hand, the term "mentally ill" was included in the penal codes of the Middle Ages, according to which non-punishment was provided for the person who had committed a criminal offense in this state.

[4] Yes there.
[5] F. Antolisei "*Manuale di diritto Penale, parte generale*", 1985, pg. 521.
[6] F. Antolisei "*Manuale di diritto Penale, parte generale*", 1985, fpf. 280
[7] G. Marini "*Imputabilità, in digesto delle discipline penalistiche'',* 1988, pf. 255

Despite the exemption from criminal responsibility and the imposition of criminal punishment, for persons who have not reached the age or who are irresponsible there is a special treatment outside the penal system, namely educational measures and medical measures.

Irresponsibility as a condition for exemption from criminal liability

In criminal law, responsibility is defined as the existence of sufficient conditions to attribute a criminal offense to a subject and to consider the legal consequences. No one can be held criminally responsible if at the time of the offense he was unable to understand and control his actions or to desire the consequences, but incapacity does not exclude responsibility when it is a consequence of the subject's culpable actions (for example drunkenness)[8].

The concept of irresponsibility, in today's times, when it has lost the connection it had in the past with the term ``mentally ill'', has faded and become undefined, losing any value it had for psychiatry in the past. Moreover, awareness has been created that mental disorder is not only a mental illness, but constitutes a complex and indefinable entity, being the result of many factors such as genetic factors, stress, etc. Today there is no longer mental illness in the ancient sense of the term, today there is a different vision of mental illness, consisting of many factors integrated together. The doctrine of criminal law does not actually define the notion of mental capacity, but the notion of mental incapacity. Mental incapacity is defined as the inability to understand or control the performance or non-performance of an action, as well as the inability to understand that one is committing a criminal offense due to a temporary or permanent illness, mental disorder or retardation in mental development.Irresponsibility due to mental state is provided for in Article 17 of the Criminal Code, according to which:

"There is no criminal liability for a person who, at the time of the commission of the criminal offense, suffered from a mental or neuropsychic disorder that completely disturbed his mental balance, and as a result was not able to control his actions or omissions, nor to understand that he committed a crime criminal.The person who at the time of committing the criminal offense suffered from a mental or neuropsychic disorder that has reduced his mental balance to fully understand and control his actions and omissions is responsible, but this circumstance is taken into account by the court in determining the amount and type of punishment. punishment."

The issue of whether the person was irresponsible at the time of committing the criminal offense, whether or not he was able to contain himself and manifest his will, is verified for each person taken as a defendant.Responsibility is presumed, while irresponsibility is proven and declared in court. A person who has reached the age of majority is considered responsible until the contrary is proven[9].

It should be specified that responsibility is investigated during the development of the criminal process, it always refers to the moment in which the criminal act for which the proceedings are being carried out was committed. Responsibility is conceived as the ability to understand and

[8] Shefqet Muçi "*Criminal low part "*, 2007, pg. 131

[9] Item - Giancarlo Zappa, Carlo Alberto Romano "*Infermita mentale, pericolosita sociale e misure di sicurezza alla prova degli anni duemila*"; can be found o the website www.rassegnapenitenziaria.it.

enable the performance of an illegal action, so it means the tendency of the subject to recognize reality, what happens around him, as well as the ability to take the positive and negative values of this reality. It presupposes a mental state that consists in understanding and judging his actions and inactions. The ability to act is the ability of the subject to decide autonomously, to distinguish between legal and illegal based on a reasonable opinion, as well as to resist negative external stimuli and to manage them well. So, the premise of the model on which the foundation of the cultural, legal and moral system rests is clearly visible, in which responsibility has as a precondition the freedom of the author and of the criminal action. If it were not so, sanctions, social disapproval, the idea of guilt, justice and right would have no meaning. It is important to differentiate criminal responsibility, which is a legal concept and as such contributes to the field of law, with the use that finds as a primary need the formation and socialization of man and his abilities in every field. From the responsibility of the subject also derives its criminality, with its consequences such as the application of security measures. From this double element derives the social dangerousness. The law connects irresponsibility with the loss of two elements, intellectual and volitional[10].

The Penal Code does not recognize the relationship between the affective sphere and the intellectual and volitional sphere, and as such, under the influence of criminal policies for the prevention of criminal offenses, denies the influence of the emotional and passionate state in taking criminal responsibility. The legislator has disciplined irresponsibility by considering it as a differentiation between pathological and non-pathological cases, excluding or schematizing special states such as passionate emotional states and based on the expression that 'if a person is not sick, he must control his instincts' . So nosography, which was supposed to create a situation of clarity and unify judgments, has actually led to the possibility of re-introducing some situations that should have been excluded from the law. The fact that on the one hand nosography is very broad and risks not being easily practicable in the psychiatric-forensic field, and on the other hand very narrow in non-obvious situations, has brought strong criticism towards psychiatric nosography[11]. Jurisprudence has emphasized the three psychic factors which characterize the action in the subjective aspect: feeling, intelligence and will. The Penal Code, bordering on irresponsibility, considers only the last two and not the first. Meanwhile, character anomalies and insufficiency of ethical and social feelings cannot be considered as indicators of irresponsibility due to mental state, as long as they are not associated with disorders of the intellectual or volitional sphere, i.e. of a pathological nature.

The doctrine agrees that irresponsibility cannot be limited only within clearly defined frameworks, but it expresses a broader concept than the concept of mental illness, and therefore its content can be determined on the basis of the ratio, the index of the rules for irresponsibility. The concept of irresponsibility is broader than that of mental disorders, provided for in our Criminal Code, given that not all mental disorders are classified as causes that bring about irresponsibility. Criminal responsibility is the obligation to be subject to the penalties determined by the Criminal Code in relation to the commission of a criminal offense[12].

[10] Fiandaca G., Musco E. "*Diritto penale, parte generale",* 1989, pg. 252

[11]Nosography is the systematic classification or description of mental illnesses.

[12] Item - Giancarlo Zappa, Carlo Alberto Romano "*Infermita mentale, pericolosita sociale e misure di sicurezza alla prova degli anni duemila*"; mund të gjendet në faqen e internetit www.rassegnapenitenziaria.it.

Conclusion

The issue of criminal irresponsibility is regulated in the Criminal Code with the aim of satisfying the needs of the law once and for all, being enriched with doctrinal and jurisprudential orientations regarding the concept of the ability to act and to desire the consequences and mental disorder, very soon the codification in question showed the impossibility of satisfactorily solving the cases faced by the practice, making the interpretive lines that permeate until today the entire debate on mental illness, as a reason for exemption from criminal responsibility , began to lose their sharpness under the influence of alternative orientations, which include in the debate not only legal sciences but also medicine, psychiatry, psychology and criminology. Currently, according to the unanimous opinion of the doctrine, the concept of criminal irresponsibility due to mental state is in the conditions of a crisis, which in short is summed up in the impossibility to answer precisely the question: When can a subject be declared irresponsible? This is due to the fact that the concepts that should serve the definition of the article, such as "the ability to understand the actions and to desire the consequences" and "mental disorder" turned out to be extremely general and difficult to interpret. The uncertainties that made the interpretation of Article 17 of the Criminal Code problematic are related to many factors of different natures, although they depend mainly on the evolution of psycho-pathological sciences, which on the one hand made the discipline of the code inappropriate and outdated , and on the other hand brought about the loss of the limits of the definition of irresponsibility due to the mental state, through the elaboration of concepts on the disease carried by the jurisprudence, often of opposite orientations, as in terms of the mental disorder that excludes the ability to understand, also in terms of the very structure of the judgment of irresponsibility.

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Recapitulation of empirical research on teachers' difficulties in applying digital technologies in teaching

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Abstract:

This paper provides a concise overview and analysis of research that shows the results of teachers' difficulties in using digital technologies in teaching. The aim of the work is to identify specific research problems, how they have transformed over time, what methodology was applied in those researches and what empirical knowledge was obtained. The analysis of the results showed that different methodological solutions are used in the research, and that there are different problems of teachers, the most dominant of which is information about digital technologies and the function that teachers manifest in the process of their application in teaching. In the concluding discussion of the work, research is listed that can contribute to the understanding of the authentic difficulties of teachers in the application of digital technologies in teaching and the development of a context that would enable teachers to effectively solve these concerns.

Key words: teacher difficulties, digital technologies, teaching, research on teacher problems

Apstrakt:

U ovom rad data je sažet pregled i analiza istraživanja u kojima su prikazani rezultati o poteškoćama nastavnika kod korišćenja digitalnih tehnologija u nastavi. Cilj rada da se identifikuju konkretni problemi istraživanja, kako su se oni transformisali tokom vremena, koja metodologija je primenjivana u tim istraživanjima i do kojih se empirijskih saznanja došlo. Analiza rezultata je pokazala da se u istraživanjima koriste diferencirana metodološka rešenja, te da egzistiraju različiti problem nastavnika, od kojih dominira informisanost o digitalnim tehnologijama i funkcija koju nastavnici manifestuju u procesu njihove primene u nastavi. U zaključnom razmatranju rada navedena su istraživanja koja mogu doprineti razumevanju autentičnih poteškoća nastavnika kod primene digitalnih tehnologija u nastavi i razvijanju konteksta koji bi nastavnicima omogućio da efikasno rešavaju te brige.

Ključne reči: *nastavničke poteškoće, digitalne tehnologije, nastava, istraživanje nastavničkih problema*

Uvod

Nastavničke brige je moguće razumeti kao skup nastavničkih emocija, stavova i percepcija o određenom zadatku, problemu ili izazovu u njihovoj nastavnoj praksi (Fuller, 1969). Reč je o usmerenosti pažnje, uz postojanje određenog osećanja anksioznosti i nesigurnosti da li će uspeti da se suoče sa određenim izazovom (Simić, 2019). Te brige mogu nastati kao posledica uvođenja novina i promena u nastavnu praksu, među kojima važno mesto pripada i digitalnim tehnologijama. Veliki broj diskusija o digitalnim tehnologijama u nastavi uokviren je diskursom promene (Selwyn, 2011). S obzirom na stalni razvoj, nedovoljno jasan mehanizam funkcionisanja i raznovrsnost mogućnosti njihove primene, naročito u kontekstu stalne izloženosti zahtevima za uvođenjem promena u nastavu, te tehnologije mogu postati izazov za nastavnike (Ertmer & Ottenbreit-Leftwich, 2010; Koehler et al., 2013) i izvor njihovih briga. Te brige je neophodno razumeti ako želimo da obezbedimo uslove za pri menu digitalnih tehnologija u nastavi i pružimo podršku nastavnicima. Put ka njihovom razumevanju vidimo u planiranju i realizaciji istraživanja te problematike, dok prvi korak može predstavljati upoznavanje sa realizovanim istraživanjima. U ovom radu ćemo predstaviti

pojedina takva istraživanja. U radu će biti prikazani i analizirani članci u kojima su predstavljena istraživanja o nastavničkim brigama u vezi sa korišćenjem digitalnih tehnologija u nastavi. Cilj ovog pregleda je da uočimo koji su konkretni problemi istraživani i sa kojom svrhom, kako se to menjalo tokom vremena, koja metodologija je korišćena u tim istraživanjima i do kojih se saznanja došlo. Analiziraćemo ukupno dvanaest istraživačkih radova koje smo izdvojile na osnovu pokazatelja kvaliteta časopisa (impact factor), relevantnosti članka za problematiku kojom se bavimo (na osnovu pretraživanja ključnih reči: teachers' concerns, digital technology, ICT, online teaching) i važnosti pitanja koja pokreću u kontekstu vremena u kome su nastali.

Kada se započelo sa istraživanjima nastavničkih briga o digitalnim tehnologijama u nastavi?

Na osnovu analize nama dostupnih istraživačkih radova moguće je primetiti da se istraživanja nastavničkih briga u vezi sa digitalnim tehnologijama u nastavi javljaju u vreme kada te tehnologije dobijaju širu upotrebu u različitim delatnostima i svakodnevnom životu. Prva takva istraživanja realizovana su i objavljena osamdesetih godina prošlog veka (Ciccheli & Beacher, 1985; Cumming, 1988; Heller & Martin, 1987; Wedman & Heller, 1984; Wedman et al., 1986) u Sjedinjenim Američkim Državama. Ta problematika je ostala aktuelna do današnjih dana, a istraživanja se realizuju i u drugim zemljama.

Šta se i zašto istraživalo?

Stariji istraživački radovi polaze od veoma sličnog cilja istraživanja: da se sagledaju ključne nastavničke brige u vezi sa korišćenjem kompjutera u nastavi (Ciccheli & Beacher, 1985; Cumming, 1988; Heller & Martin, 1987), dok su radovi novijeg datuma usmereni ka različitim vidovima savremene tehnologije (Web 2.0 alati, onlajn igrice) i načinima njihove upotrebe (Hao & Lee, 2015; Jong, 2016). Uočava se da su u poslednjim decenijama istraživane nastavničke brige u vezi sa digitalnim tehnologijama u nastavi koja se ostvaruje u fizičkom okruženju realne učionice (Burke et al., 2017; Donovan et al., 2007; Hao & Lee, 2015; Jong, 2016; Liu & Huang, 2005), ali i brige koje se odnose na onlajn nastavu (Farmer & West, 2019; Rakes & Dunn, 2015). Osnovna svrha prvih istraživanja o nastavničkim brigama u ovom domenu ogledala se u tome da pomognu kreatorima obrazovnih politika da donesu odluke, da kreiraju planove uvođenja digitalnih tehnologija u nastavu (Liu & Huang, 2005) i da razviju programe inicijalnog obrazovanja i stručnog usavršavanja nastavnika (Ciccheli & Beacher, 1985; Wedman & Heller, 1984; Wedman et al., 1986), a u nekima od njih naglašava se i potreba umrežavanja i razvijanja zajednica nastavnika koje bi se bavile tim pitanjima (Heller & Martin, 1987). U istraživačkim radovima objavljenim poslednjih godina prepoznaju se iste te implikacije, ali se u većoj meri ističe važnost razumevanja autentičnih briga nastavnika i stvaranja prostora da se čuje glas nastavnika u procesu donošenja odluka (Donovan et al., 2007; Farmer & West, 2019; Hao & Lee, 2015).

Kako su istraživane nastavničke brige? U istraživanjima nastavničkih briga polazi se od različitih metodoloških pristupa. Istraživanja iz osamdesetih godina XX veka isključivo su kvantitativna (Ciccheli & Beacher, 1985; Heller & Martin, 1987; Wedman & Heller, 1984; Wedman et al., 1986), a taj metodološki pristup ostaje zastupljen i u najnovijim istraživanjima (Burke et al., 2017; Hao & Lee, 2015; Liu & Huang, 2005; Rakes & Dunn, 2015). Krajem osamdesetih javljaju se prva kvalitativna istraživanja (Cumming, 1988) i ona ostaju zastupljena i u najnovijim istraživanjima te problematike (Farmer & West, 2019).

U istraživanjima koja polaze od kvantitativne istraživačke paradigme anketiranje je najzastupljenija tehnika za prikupljanje podataka, pri čemu je korišćen instrument Upitnik o stadijumima briga – The Stages of Concern Questionnaire (George et al., 2013). Taj instrument je korišćen samostalno u originalnoj verziji (Ciccheli & Beacher, 1985; Heller & Martin, 1987; Wedman & Heller, 1984; Wedman et al., 1986; Liu & Huang, 2005; Rakes & Dunn, 2015), u revidiranoj verziji (Burke et al., 2017; Jong, 2016) ili u kombinaciji sa još nekom vrstom upitnika (Hao & Lee, 2015; Rakes & Dunn, 2015). U kvalitativnim istraživanjima u najvećoj meri je zastupljena tehnika intervjuisanja, pri čemu su korišćeni polustrukturirani protokoli za intervju (Cumming, 1988; Farmer & West, 2019). U istraživačkim radovima u kojima se kombinuju kvantitativni i kvalitativni pristup istraživanju prikupljanju podataka se pristupilo anketiranjem i intervjuisanjem (Donovan et al., 2007; Jong, 2016). U jednom od analiziranih radova kvalitativni podaci su prikupljeni i tehnikama posmatranja, vođenja dnevnika i anegdotskih beleški (Jong, 2016). Sudeći na osnovu

analiziranih radova, može se zapaziti da su, nasuprot ograničenosti uvida do kojih se dolazilo primenom upitnika, u intervjuima dobijani potpuniji i opširniji odgovori nastavnika. Budući da je u svim kvantitativnim istraživanjima koja smo pregledali korišćen Upitnik o stadijumima briga, u nastavku ćemo ga predstaviti. Taj upitnik je razvijen radi ispitivanja različitih vrsta briga koje nastavnici pokazuju prema određenoj inovaciji. Različite vrste briga prikazane su u sedam stadijuma: (0) stadijum svesnosti – nastavnik pokazuje malo briga za inovaciju; nema razvijenu svest o inovaciji; (1) informacioni stadijum – nastavnik brine da li ima dovoljno informacija o karakteristikama i uslovima primene inovacije; (2) lični stadijum – nastavnik razmišlja o tome kako će inovacija uticati na njega, koja je njegova uloga u procesu njene primene i da li ima dovoljno razvijena znanja i veštine za to; (3) stadijum upravljanja – nastavnik razmišlja o vremenu potrebnom za primenu inovacije, organizaciji i planiranim zadacima; (4) stadijum posledica – nastavnik se fokusira na uticaj inovacija na učenike; (5) stadijum saradnje – nastavnik razmišlja na koji način može da sarađuje sa drugima da bi unapredio efekte inovacije; (6) stadijum traženja novog fokusa – nastavnik ima razvijenu svest o jakim stranama inovacije i želi da pronađe nešto bolje od date inovacije (George et al., 2013; Simić, 2019). U istraživanjima u kojima je korišćen upitnik formirani uzorak je najčešće bio nameran i u nekim slučajevima prigodan, a broj ispitanika se kretao od 78 (Ciccheli & Beacher, 1985) do 193 (Hao & Lee, 2015). Kvalitativna istraživanja su realizovana putem intervjua sa dva (Cumming, 1988) do sedam nastavnika (Farmer & West, 2019).

Do kakvih se saznanja došlo? Na osnovu rezultata istraživanja moguće je izvesti zaključak da se u većini istraživanja pokazalo da nastavnici imaju najviši intenzitet briga na informacionom (Ciccheli & Beacer, 1985; Heller & Martin, 1987; Hao & Lee, 2015; Liu & Huang, 2005; Rakes & Dunn, 2015; Wedman & Heller, 1984; Wedman et al., 1986) i ličnom stadijumu (Donovan et al., 2007; Ciccheli & Beacer, 1985; Heller & Martin, 1987; Liu & Huang, 2005; Rakes & Dunn, 2015; Wedman & Heller, 1984; Wedman et al., 1986). Budući da postoji sličnost između prvih istraživanja te problematike i onih koja su novijeg datuma, zaključuje se da veći pristup digitalnim tehnologijama do koga vremenom dolazi još uvek ne znači da nastavnici raspolažu potrebnim informacijama o njihovim karakteristikama, efektima i preduslovima za njihovo korišćenje. Stoga očekuju da dobiju više relevantnih informacija i ne prestaju da brinu o uticaju tehnologija na njih same i o tome da li imaju dovoljno znanja da ih primene. U jednom od istraživanja se pokazalo da postoji visok nivo briga na stadijumu traženja novog fokusa, što istraživači dovode u vezu sa opremljenošću škola digitalnom tehnologijom i prilikama nastavnika da pohađaju obuke za stručno usavršavanje (Liu & Huang, 2005). Rezultati istraživanja su, takođe, pokazali da nastavnici mogu istovremeno da ispoljavaju brige na višim i na nižim stadijumima. Dakle, nastavnici ne moraju rešiti ili umanjiti brige na nižim stadijumima da bi mogli da razviju one na višim stadijumima (George et al., 2013). U kvalitativnom istraživanju koje je sproveo Kuming (Cumming, 1988) došlo se do saznanja o autentičnim brigama nastavnika koje se odnose na planiranje i organizaciju nastave; upravljanje radom u učionici i prilagođavanje sadržaja nastavnog programa; artikulaciju vremena; osmišljavanje vrste zadataka; praćenje procesa rada i napredovanja učenika; vrste znanja i veštine koje učenici razvijaju; materijalno-tehničku opremljenost i organizovanje fizičkog prostora. U istraživanju u kojem su ispitivane brige nastavnika u onlajn nastavi (Farmer & West, 2019) neke od tipičnih nastavničkih briga odnosile su se na uravnotežavanje privatnih i poslovnih obaveza; nedovoljno korišćenje materijala, videa, vodiča od učenika; nerazvijene veštine rada sa tehnologijom; otežan razvoj odnosa sa učenicima; brige koje mogu imati učenici.

Umesto zaključka:

Šta možemo naučiti iz ovih istraživanja? Mogućnost uopštavanja i izvođenja generalizacije o različitim vrstama nastavničkih briga na osnovu prikazanih istraživanja svakako je ograničena i prikazane rezultate treba posmatrati u kontekstu u kome su realizovana i ograničenja koja proističu iz primenjene metodologije. Ipak, ovaj pregled omogućava da se zaključi da nastavničke brige u vezi sa digitalnim tehnologijama postoje u različitim sredinama i da one ne prestaju vremenom i sve većim prisustvom digitalnih tehnologija u različitim sferama života. Takođe, on pokazuje da je nastavničke brige moguće istraživati primenom različitih metodologija, da su neki provereni instrumenti za takva istraživanja dostupni i da nije neophodno da se istraživanja briga nastavnika zasnivaju na velikim i zahtevnim načinima uzorkovanja. Naprotiv, u savremenim istraživanjima naglašava se značaj razumevanja autentičnih nastavničkih briga i njihovo razmatranje u kontekstu u kome nastavnici rade. O odnosu nastavnika prema

digitalnim tehnologijama moglo bi se suditi i na osnovu istraživanja u čijem fokusu nisu bile brige nastavnika ili nisu koristila tu terminologiju. Zato ovaj rad ne smatramo sveobuhvatnim prikazom i analizom istraživanja ove problematike. Međutim, nije bez značaja činjenica da nismo pronašle veliki broj istraživanja usmerenih na brige nastavnika u vezi sa ovim pitanjem, dok ih u našoj sredini nismo uopšte pronašle. Imajući u vidu potencijalni značaj i neminovnost korišćenja digitalnih tehnologija u nastavi (naročito u vreme izazvano pandemijom) i nalaz da takve brige postoje, nadamo se da će ovaj prikaz podstaći sprovođenje istraživanja briga nastavnika u našoj sredini. Želimo da ukažemo na potrebu i važnost ne samo naučnih istraživanja većeg obima, koja bi imala implikacije za obrazovnu politiku, već pre svega malih istraživanja koja bi realizovali pedagozi – stručni saradnici kako bi razumeli ove brige u kontekstu svoje škole. Polazeći od toga, oni bi mogli da razvijaju podršku nastavnicima za korišćenje digitalnih tehnologija ili da zajednički tragaju za sistemskim rešenjima sa ciljem građenja konteksta koji bi bio odgovarajući za korišćenje digitalnih tehnologija i u kome nastavničke brige ne bi bile samo lična stvar pojedinačnih nastavnika već i odgovornost škole i obrazovnog sistema.

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TECHNOLOGY BETWEEN NEEDS AND OPPORTUNITIES IN LANGUAGE PRESERVATION AND READERSHIP IMPROVEMENT

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ABSTRACT

There are some questions about the relevance and usefulness of the efforts to expand, enrich, and preserve these collections to society at large, despite the fact that the number of digital collections has been growing steadily and through a variety of techniques. These issues necessitate explanations and debates of how research initiatives and techniques used in digital libraries enhance the quality of human life in all areas, including education, business, socialization, public administration, culture, and the humanities. These inquiries also set off a hunt for brand-new approaches to creating, organizing, analyzing, and storing digital collections as well as for providing cutting-edge services in a complicated, connected, and dynamic environment that affects our daily lives.

Keywords: digital, language, literature, reading, preservation.

INTRODUCTION

Data is viewed as the most important resource in the world and the foundation of all study (Borgman, 2012). It can be in any form, including text, sound, still photos, moving images, models, games, simulations, and organized databases. (Borgman, 2015). Studies demonstrate a number of advantages to sharing research data. Governments and organizations that fund research are therefore promoting open access and sharing of research data more and more, particularly when such data are produced through publically sponsored research. All of this is extremely wonderful, but the open access and sharing of data cannot completely materialize until researchers and other interested parties can locate and use data as and when they require it and with tolerable ease. The majority of research data repositories use the same or slightly modified versions of text retrieval engines for data retrieval because data retrieval systems are still in their early stages of development. (Borgman, 2015). It is impossible to expect ordinary text retrieval engines to adequately adapt to research data since the essential qualities of research data and the manner in which its users interact with it differ significantly from those of research papers. (MacMillan, 2014). The task of tagging datasets is frequently more difficult than tagging text, and unlike the indexing of research papers by services like Web of Science, the indexing of research datasets is not standardized or controlled. The inability to adequately contextualize data for discovery and reuse using standard metadata and description is one of the major problems with data retrieval. (Wallis, Rolando, Borgman, 2013).

CLASH OF METHODS

Very little study has been done to compare how different teaching methods influence reading comprehension in children with individual differences—the thousands who are failing. Given the gravity of the situation, most younger children would be considered functionally illiterate in a few years if things continue as they are. They will read, but not with the necessary comprehension or depth of thought and emotion.

With these illiterate children in the forefront of our thoughts, the hybrid approach—physical and digital—to developing a biliterate brain needs to be much more carefully explored for primary schools. This calls for extensive, rigorous research, starting with studies that specifically address the effects of various media on children's attention and memory, the effects of children spending an increasing amount of time on digital devices while simultaneously becoming more distracted, the rising risk of addiction among our children, and the already

noted decline in empathy among young people. We must have a solid understanding of what works best for various learners at different stages of development. We need publishers and designers to build digital breakthroughs that are as intellectually successful as they are engaging, and we need scientific confirmation that this is the case. We also need parents, educators, and political leaders to demand such studies.

What are the chances that this will succeed in two mediums if many kids struggle to become proficient readers in only one? Will biliteracy prove to be yet another barrier to their success dependent on their class? How is it possible to assign instructors yet another onerous task?

Today, more than ever before, there are more causes for optimism. First, the new research has revealed that there are six or seven basic early reader profiles, which makes it much simpler to identify problem readers and assess them earlier. Then, teachers may more effectively adapt their lessons to the needs of various pupils. Digital media may in the near future completely alter the course of education. For instance, the majority of dyslexic children need up to 10 times more exposure to the letter-sound correspondence rules and frequent letter patterns of English than a teacher in a classroom of 25 students, regardless of grade, can easily supply. The adoption of the digital medium would change everything for those kids. Consider what would happen if those students who were having trouble reading were given the opportunity to practice letter patterns and rules either the day prior or the morning of the session. Using a digital medium in this way could give them the multiple repetitions they need and possibly showcase their frequently underutilized creative strengths, which would defuse the negativity that children with dyslexia frequently, unfairly, endure. This is important because children with reading challenges can easily feel like something is "wrong" with them.

Additionally, some kids will never make effective screen readers and will always favor print, and the opposite is also true. Julie Coiro's excellent study examined seventh-graders' preferences for reading. Her most interesting finding was that, frequently, the best print readers were the worst internet readers, and vice versa. It's feasible that certain children with dyslexia would benefit more from early adoption of digital reading, regardless of whether this finding already reflects the formation of two distinct reading circuits in older children today or an underlying learning difference.

DIGITAL VS PRINT

Using digital technology to give kids the most exposure to the sounds, grammatical structures, and meanings of the words they read in a variety of contexts would undoubtedly be beneficial for both teachers and students.

Digitally interactive books, audiobooks, and carefully selected video games are helpful complementary media for somewhat older kids who are still struggling to learn to read and for whom books have become hated objects. (Vaughn, Wexler, Leroux, et al., 2012). According to the growing body of research on video games, some children's success in them not only improves their visual attention and hand-eye coordination, but also subtly promotes learning to read when it's necessary to succeed.

The teaching staff at Newgrange School, led by neuroscientist Gordon Sherman, uses a variety of digital technologies to pique and hold the interest of its older students, many of whom have a variety of learning issues. One of the most significant contributions of modern instructional technology may be the ability to draw on the inherent creativity of our different learners.

The introduction of educational technology into US schools has demonstrated that nothing about this is simple. When compared to traditional classrooms, meta-analyses of research looking into the integrated use of various digital devices in the classroom show significant but relatively small improvements in reading, math, and science achievement for elementary and high school students. (Wolf, 2014). Teachers' lack of interest is not the cause of this. According to a 2017 survey on the usage of educational technology, two-thirds of US teachers are actively using some sort of technology in their classrooms, but they feel the need for further assistance and training, as observed by publishing CEO Rose Else-Mitchell.

Given the cognitive impact of digital media, which we are only now beginning to understand, the dearth of professional development and support for teachers, and finally the great lumbering elephant in the room of all educational technology research: the digital access gap, it is highly likely that the use of digital media in the classroom has not yielded impressive results to date.

A MATTER OF OPPORTUNITIES

If we are sincere about leveling the playing field for young students, we must confront the intricate link between inequality and digital access. A sizable percentage of kids live in homes with hardly any books and have little to no access to other digital gadgets than their overly-used cell phones. Robert Putnam and James Heckman claim that there are an increasing number of families living in disadvantaged conditions. (Wolf, 2014). They do not have the luxury of fretting about whether their kids are reading too many improved e-books or getting too much exposure to the digital world. They don't have either computers or books.

The remark that "use of the computer may have widened the writing achievement gap" can be continued. Children who read fewer books have distinct vocabularies and experiences with stories and storylines that other kids have read for a long time. (Wolf, 2014). In computer-based assessments, which many parents, teachers, and this author would approach with mixed feelings, children who have less exposure to digital gadgets and computers have a harder difficulty typing and far less practice utilizing a digital medium to record their thoughts. Both the frequently mentioned achievement gap and the less frequently acknowledged digital culture divide need to be addressed if we are to create a code-switching reading brain for every one of our kids.

Victoria Rideout and Vikki Katz describe a survey of more than a thousand low-to-moderate-income families in their excellent paper, "Opportunity for All?: Technology and Learning in Lower-Income Families." There are two different types of digital gaps in these families: one has to do with access to digital tools, and the other, according to researcher Henry Jenkins, has to do with participation, where parents have little ability to offer either guidance or high-quality apps, leaving kids to be more entertained than helped in their educational lives. (Wolf, 2014).

This study made it evident that while the majority of the families examined were digitally linked in some form, many solely utilized their cell phones, the majority of which were misused and used more data than they were supposed to. Only 6% of the families have registered for the (in theory) subsidized services for low-income families. In their conclusion, the authors stated that "access is no more just a yes-or-no question. The quality of a family's Internet connection and the types and capabilities of the devices they have access to affect both parents and kids in significant ways.

Simply having access does not guarantee that a child will be able to use digital gadgets effectively. In their report on a project within Philadelphia libraries, Susan Neuman and Donna Celano discussed one of the most depressing studies about digital access to date. The study's lofty goal was to look into the consequences of giving underprivileged kids and families access to books and the internet through libraries. The findings were contrary to all expectations: giving underprivileged children access to digital tools alone could have negative consequences if parents did not become involved. (Wolf, 2014). In that study, the children performed noticeably lower on literacy exams than other kids did, and the gaps between the groups widened as technology devices were introduced, especially when the kids used them for enjoyment.

CONCLUSION

Digital learning's benefits cannot be boiled down to exposure or access problems. Many well-meaning technology professionals still believe that simply using a computer will cause significant synaptic growth in learning, including literacy. Such ideas stem from the well-intentioned but ultimately overromanticized belief that children's natural curiosity will drive learning and literacy. Although amazing, fruitful, and essential, curiosity and discovery are insufficient. Without learning anything about how to become literate, kids can learn a lot about digital literacy.

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THE ROLE OF IT TOOLS IN INSTITUTIONAL PRESERVATION OF LITERATURE

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ABSTRACT

The field of cultural preservation has experienced enormous hope thanks to digital technologies. It has emerged as a remedy for the issues with content accessibility and media breakdown. Theoretically, digital technology allows for flawless replication, universality (any content may be digitalized), homogeneity, and ubiquity (non-competitive access to content) (the life cycle is integrated in an interoperable technical system). But, in practice, one must deal with problems like the emergence of new formats, the logical obsolescence of content, the proliferation of altered copies, and complex and heterogeneous reading contexts. Digital data archiving and preservation seem to be especially important in the realm of electronic literature. The preservation of electronic works of literature raises a serious theoretical and practical issue. A digital literary work is in fact not an item, but it is also typically not a straightforward, momentary event, such as a performance or a digital installation. In actuality, it combines the two: it is both a transmittable item and, more importantly, a process that can only take place in an actualization. This paper will give a summary of these important topics.

Keyboard: literature, languge, technology, digital texts, culture.

INTRODUCTION

Humans usually adopt new technology without properly assessing their benefits and drawbacks, integrating them into their life right away. This is a part of the popular attitude, which seems to be normalizing or naturalizing technology and the changes it brings as inevitable and natural with regard to anything digital. Digitization is the process of turning printed materials—like books, maps, and other paper products—into an electronic, digital counterpart. Digitization has a positive effect on literature because it functions as a wonderful "equalizer," enabling students and researchers to use the internet as a cost-effective, always-accessible data bank.

Magazines, newspapers, and other print media have online and digital editions as well, but these versions are often not merely simple uploads or translations of the offline versions into the online environment. They quickly adopted to new digital technology genres that have interactive components, such as animated text and leap to different textual portions and supplemental textual and non-textual information formats with its own aesthetic, such as music, video, and pictures. Literature plays a significant role in language instruction and imparting lessons that can change a person's life in order to preserve and further the evolution of language beyond the realm of spontaneous speech or fast communications. It serves as an illustration of how language may be utilized to communicate thoughts creatively. Literature also plays a significant part in conveying history's lessons and the ideals of human culture by serving as examples of how to live a life that is compatible with those teachings and values. Beyond consumerism and popular culture, they also contribute to the preservation and advancement of human history and culture.

To assess the true impact of eBook sales globally, statistical data is essential. Consequently, examining sales data for English Literature eBooks, particularly in the English-speaking globe (the USA and UK in particular), will provide trends that can be compared to North Macedonia's consumption of eBooks to determine where things are heading and what can be done to achieve those trends. In addition to the descriptive technique, a historical perspective is required to comprehend how we arrived at this point. This approach is backed by specialized literature on the subject.

ENGLISH AT THE FOREFRONT

With 1.5 to 2 billion speakers, English is the most widespread language in the world. Almost 60 countries have it as their official language, and it is widely spoken in many more. It serves as the standard language for worldwide news media, social media, conferences, research, and, most significantly, the internet. Because of this, it is crucial for anyone seeking for chances to engage in international business or education or make social contacts.

Along with English terms, particularly slang, embodying the language of the youth around the world, a trend to employ English as a promotional tool has evolved in many countries. The first recommends a marketing plan to give consumers a specific impression or emotion.

Many countries have taken steps to stop English and other alien languages from contaminating their native or national dialects. And to what extent? Will the precaution make things more difficult or less difficult? Does speaking English help us reach our objectives more quickly? Is the problem political, social, or cultural? These are the inquiries that the thesis will attempt to respond to.

Since Albanian is one of the most negatively impacted languages in this regard, it is essential to assess how well it blends with English, particularly in social media and everyday conversation. Most importantly, Albanian should not be used in official statements or press conferences when discussing international cooperation, politics, or even domestic issues; instead, English should be used instead.

If we were to use an exploratory approach to examine the use of English in various statements made by Albanian media professionals, politicians, etc.; or a historical approach to show how things have changed over time, with an emphasis on how things have changed since the introduction of the Internet in our region; it is certain that the statistics we gather about the amount of English words used by our region's youth in the media and by state institutions will give a correlational data overview of how English is used in EU nations, of which we hope to be a part.

STORING CULTURE DIGITALLY

Mathematical representations of cultural and heritage items, such as manuscripts, artifacts, rare books, and rare images, are used to store cultural heritage. The majority of contemporary literature is now digital in nature due to the development of digital technology, yet there are still many analog forms. Educating Future Generations about Culture and Heritage Libraries, archives, and museums work together to make sure that people can access the digital versions of the cultural heritage resources they have in their collections online. Archives and museums can digitize their analog assets to create digital versions of them.

Future generations must have long-term access to analog and digital information, which requires the preservation of cultural artifacts. Digital protection and document problems are numerous, despite the necessity of digitalization and the preservation of cultural and heritage treasures. Around the world, there are many digital and presentation projects being worked on by archivists, project managers, curators, librarians, and digital lovers. Yet, it can be challenging for project managers and professionals to keep up with technology advancement and other obstacles.

Wido van Peursen, a biblical scholar, notes that because academics have been so keen to use digitalized manuscripts: "Now that the digital item has been available, who will ever go back to the "actual" manuscript?" 2010 (Paursen).

We must define their "digital materiality" in order to evaluate the utility of digitized manuscripts. Today's digital technologies advance quickly, file formats change frequently, and practically everyone copies cultural artifacts like books, images, sounds, and movies. On a single computer, you can frequently find many examples of the same thing.

In order to play digital media, a tool is also required in addition to the object itself. The idea that we are moving from a print to a digital world is widely accepted. Digital print sources are printed works that have been fully text-encoded digitally so that you can search for, pick, and edit the content (restrictions).

The usage of digital repositories has four general advantages. As there is no longer a need to visit the library, gather, request, photocopy, or save vast records, the usage of digital and digital sources will accelerate. Additionally, it offers accessibility to resources that may be challenging to find otherwise. Since that each manuscript reader is distinct and can only be accessible in one location on Earth, typically a library, thanks to their stringent requirements, the manuscript reader in particular advantages digitally in this regard.

It is viewed as a benefit that it is possible to dive inside the source directly into the required part in addition to these two characteristics of accessing the item level. This is especially true for online resources whose information can be searched in its entirety. Finally, and more ideally than is actually stated, digital repositories can create new opportunities for research by enabling the publication of entirely original research topics, techniques, and findings.

The Dead Sea Scrolls were photographed by the Western Semitic Research Project using high-resolution digital cameras, allowing researchers to examine surface deterioration and hair follicle patterns as well as capture infrared images to better see the writing. Scientists have already reached the level of the atom (Treharne, 2012).

Atomic-level digitization should be viewed as a decrease in the tendency for high quality and ludicrous, brought on by the idea of a digital manuscript with more than life.

According to Spiech, if experts believe that digital manuscripts present a better representation of a physical document, we will surely favor them and largely forget the physical version.

The two aspects of digital manuscripts were the digital data that represented the actual, digital manuscript and the digital environment in which it is offered or kept. When various properties are available, the first is one or more files. a collection of files, a PDF with a picture on each page, or a combination of them, for instance.

A key metric to gauge a library's commitment to comprehending digitization and the worldwide direction of digitization is the size of the digital repository (in relation to the quantity of material manuscripts). In many instances, libraries adopted a "digital quilt" technique, digitizing the entire collection without separating out the manuscripts that were likely to be important and those that were likely to be unimportant.

The portal, or the website that a user initially accesses to find the actual images of a manuscript, is another issue to take into account. It usually has something to do with a library's manuscript catalog (Chevallier, 2013).

A technology called a viewer enables users to explore and view digital manuscripts. Download the document and examine it yourself for a better reading. Online browsing is a convenient technique for fast taste and browsing. Also in this area, progress is anticipated. Today, most users are a little kind, especially when navigating between pages. As long as technology aids us, it makes sense to use it.

The primary details a user needs to refer to a manuscript are the page numbers (or folio numbers) and the manuscript call number.

The most crucial factor in assessing the usefulness and quality of a digital substitute is the image resolution. In terms of technology, we're seeking for the dots/pixels per inch, or DPI or PPI, which indicates how many pixels were used to store a square inch of a material document. Naturally, the higher the better, however it may require proportions too large for private usage.

EMBRACING STRATEGIES

The museological approach entails both the preservation of the contents in their original form and the provision of playable tools. In this approach, not only the information but also the technological setting particular to a particular period and content are maintained. Such a strategy works well for brief material but has trouble maintaining outdated equipment. Yet, it turns out to be helpful to be able to read historical materials like the earliest iterations of Word or to replicate the playing environment of arcade video games, for instance.

When libraries have access to digital storage space, this is occasionally the option they choose for electronic literary works.

The technical format of the contents must be updated throughout migration in order for them to remain compatible with and tailored to the reading tools readily available in the current technological environment. While being the

most straightforward, this strategy is expensive because it must be used for every piece of material. Also, moved contents gain from the most recent advancements in tools and formats.

Emulation: Using this strategy, the contents aren't allowed to change. Instead, modern settings replicate the reading tools of the previous formats. Theoretically highly appealing because the contents are unaltered, this technique is vulnerable because emulation is never perfect or efficient. Also, the ongoing and continuous evolution of reading tools suggests expensive and inefficient technological complexity. There have been attempts to preserve contents for some time now by simulating them on a virtual machine, which must be used in the intended setting. Advocates of this strategy assert that it guarantees archiving while upholding authenticity and integrity. To migrate or reproduce content, it is no longer required to choose what should be saved. The virtual approach has recently made this strategy more popular.

HOW TO PRESERVE?

The phrase "preservation" is an umbrella under which most librarians and archivists cluster all of the policies and alternatives for action, including conservation treatments. To compile and arrange records of human activity in locations where they may be preserved and used has long been the duty of libraries, archivists, and the clerks and scribes who came before them. But the ethic of preservation as planned and deliberate effort to raise the possibility that records of our lives, our thoughts, and our achievements may endure is a very modern phenomena. When the value of the evidence outweighs the expense of retaining it, when the evidence has a physical form, and when the roles of the evidence makers, evidence keepers, and evidence consumers are mutually reinforcing, traditional preservation as "responsible custody" is successful.

Three distinct but not mutually exclusive preservation applications of digital technologies may be distinguished, each of which is determined in part by the potential uses that a given product may have for its end consumers (Bachimont, 2007).

The most frequent way that digital technologies are employed in archives and libraries is to provide digital copies of adequate quality so that users can quickly consult them instead of just casually viewing the original sources. The original papers can be protected by limiting access to them, which satisfies the preservation objectives. Examples include photograph image reference files, clippings, or vertical files that enable the identification of certain things necessitating more in-depth analysis. The collection's or a book's original order is "frozen," much like how microfilm arranges images in a linear array. The technology's utility for preservation is now so compelling that libraries and archives are experimenting with new hardware and software features.

It is possible to create a digital system that accurately captures the information in the original sources, allowing users to take advantage of the majority, if not all, of the documents' research and educational potential. This concept applies to high-resolution systems that aim for thorough and complete content and seek "full information capture" based on emerging standards and best practices. Systems with this mediocre level of quality open up new vistas for study and application and have the potential to fundamentally alter the service goals of people who develop the products.

Digital imaging promises to create a product that can be used for reasons that are not conceivable with the original sources in a relatively small number of applications. Imaging that takes use of specific photographic intermediates, imaging that uses unique illumination to reveal features hidden by wear and tear and environmental deterioration, or imaging with such high resolution that the study of artifactual characteristics is feasible all fall under this category.

The media on which information is kept is the primary focus in traditional preservation practices. By stabilizing their structures and reducing the impact of internal and external forces on deterioration, paper, film, and magnetic tape can live longer. Specifications for appropriate environmental controls, care and handling instructions, and disaster recovery protocols were developed as a result of the emphasis on external variables. Alkaline paper standards, archival grade microfilm, mass deacidification, and more durable magnetic media are examples of advancements made in efforts to control or alleviate the internal factors of deterioration. Yet, now that archivists and librarians have identified the problems related to the longevity of media, the idea of longevity itself is losing significance as a conceptual framework for preservation.

CONCLUSION

A commitment to maintaining the physical integrity of a digital image file in the digital age has less to do with the medium on which the data are stored and more to do with the information that is lost when a file is created initially, then mathematically compressed, or when it is sent over a network. Structural indexes and data descriptions that are traditionally published alongside an item as tables of contents, prepared as separate finding aids, or prepared as bibliographic records must be inextricably linked and preserved along with the digital image files themselves in order to maintain intellectual integrity. In order to prevent malicious or inadvertent file modification, authentication processes like audit trails are also necessary for maintaining intellectual integrity (Bootz, 2006). The digital world ultimately shifts traditional preservation principles from ensuring the physical integrity of the thing to defining the development of the object whose intellectual integrity is its fundamental attribute.

By validating access processes and recording subsequent modifications to a specific digital record, librarians and archivists can maintain the integrity of digital image files. Within established and recognized database standards, we can also build and manage structural indexes and bibliographic connections. We can also have an impact on the creation of standards for the interchange of metadata, including the tools and methods that will make it possible to share structured, recorded, and standardized data about databases and data files across systems, platforms, and national and international boundaries. Nonetheless, it is misguided to believe that librarians and archivists are anything other than spectators to the quick advancement of network protocols, bandwidth, or data protection methods.

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Energy Community in the Concept of Achieving Geoeconomic and Energy Security of the Countries of the Western Balkans

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ABSTRACT

Energy security is essential to the overall stability of any country and economic development. The Energy Community means a strategic project of cooperation between the European Union and the countries of Southeast Europe, and at the same time of the Western Balkans, in the field of energy, promoted at the beginning of this century. It defines the components of a process aimed at stability in the supply and functioning of the energy market. The Energy Union is a compatible plan the European Commission in providing optimal conditions for its members. The paper also discusses the implications of these concepts on the geo-economic position and perspectives of the Western Balkan countries.

Keywords
Energy community; Geoeconomic; Energy security; Western Balkan; European Union

Introduction

Energy security, economic development and the efficiency of environmental protection have long been the basic and interrelated goals due to which today no national economy can conclude that it is "energy safe". What can be concluded is bipolarity - some have ways to reach energy at an ever-increasing and difficult-to-maintain political price, and others huge stocks of energy resources with which they want to dictate future global development. Globalization in social, political and economic processes has led to new understandings of traditional concepts of the relationship between geopolitics and national security, introducing geoeconomics as an important factor in determining the issue of economic security.

In creating high policy, security figures as one of the main priorities of any country that aspires to be highly ranked in international relations, and through the prism of security, its subgroup energy security has one of the highest places. Almost every nation state sets as one of the highest goals the reduction of energy dependence and the highest possible degree of energy security. The year 1970 has an important year in this process, which is in a way considered a turning point in the field of energy security. In the mentioned year, there was a great oil crisis and a change in the price of crude oil, which forever changed the angle of view in the field of energy security and decisively influenced the prism through which countries began to look at this issue. The decades that came and the events that filled them continued to affect the field of energy. The wars of the 1990s that took place in the Persian Gulf region, as well as the environmental

side that gained its place in the 21st century, traced energy policy to the very top of geopolitical issues.

The assessment that energy sources are one of the main drivers and tools for the development of the entire civilization in modern times is considered absolutely correct. Mankind is constantly in a kind of gap between the use or spending of resources for their needs and the desire to save energy whose capacities are consumed and reduced extremely quickly for generations to come. From the very beginning of man, and especially with the development of human activities, the need for energy increases with arithmetic progression and there is a need for an increasing amount of energy that is spent on these activities. Energy production and consumption are becoming one of the main problems of modern humanity. The growing number of inhabitants on the planet requires an increasing need for energy, and the inability to provide sufficient quantities threatens to become a constant and global problem. However, in this field, too, there are large and noticeable differences in energy needs, so that the most developed countries have been at the forefront of energy needs since the industrial revolution of the eighteenth century, while those less developed keep their needs at a much lower level. The use of huge amounts of energy by developed countries has brought strong economic benefits, but also a constant need to provide large and long-term energy sources, the absence of which would disrupt the normal and uninterrupted functioning of all levers and elements of society in those countries. From the previous lines, a potential definition of energy security could be reported, where it would state that energy security is nothing but the ability of a country to provide sufficient amounts of energy for its needs.

The strategic energy goals of the region of Southeast Europe and Western Balkan subregion, which will be emphasized in the continuation of the work, cannot deviate more widely from the goals that the European Union sets before itself and thus before the countries of this region. The current situation in most of this area is not in line with the goals promoted by the EU, energy security is declining, energy prices such as electricity, oil and gas derivatives are not competitive in the market. The challenges facing the countries of Southeast Europe are potential solutions in the long run, such as increasing the share of renewable sources, increasing biofuel production, raising the partnership of these countries with the European Union and investing in modern energy technologies, primarily fossils with low carbon dioxide.

Methodology

The Energy Community is a concept of the European Commission designed for the need to achieve security in this region in the field of energy supply and connecting the energy market of the region of Southeast Europe with the market of the European Union. The Energy Community consist of eight countries: Albania, Serbia, Bosnia and Herzegovina, Northern Macedonia, Kosovo (defined by UN Resolution 1244), Georgia, Moldova and Ukraine. The Energy Community Treaty and others adopted by the Energy Community institution and the signatories of the treaty create a uniform legal framework for the development of the energy sector in the region. The purpose of this paper is to review the role of concept of the Energy communities of the European Union in the implementation of geo-economic and energy

security projects of the countries of the Western Balkans, as a subregion of Southeastern Europe.

The main hypothesis in the research is: The concept of the Energy Community of the European Union contributes to the geo-economic development and energy security of the countries of the Western Balkans subregion. Auxiliary hypotheses are: 1) European Union projects support the exit from the economic crisis in the observed states; 2) The energy security of the countries of the Western Balkans is conditioned by cooperation with the European Union and the great powers. The paper uses research method and the scientific method of analyzing and synthesizing relevant literature sources on the importance and role of energy security and geoeconomic states, as well as methods of description, comparison, abstraction and generalization of observed information, knowledge and trends.

The scientific justification of our text is reflected in the insufficient presence of competent research in the academic environment of the observed region. The social significance of work means an adequate contribution to the education of relevant subjects in a given sphere of society. In this context, geo-economic stability and energy security in the current time of the Ukrainian war are essential postulates for overcoming the crisis in every country, including the Western Balkans.

Results and Discussions

Energy Community and Energy Union of the European Union

The process of establishing the Energy Community began in 2002 with the signing of the first Athens Memorandum of Understanding. This process continued in 2003, with the signing of the second Athens Memorandum of Understanding. The memoranda contain intentions on cooperation between the countries of Southeast Europe and the European Union in the field of energy. This process was also encouraged by the activities of the countries of Southeast Europe during the process of accession to the European Union, of which Bulgaria, Romania and Croatia have in the meantime become member states of the European Union, after the entry into force of this agreement. A special strategy has been developed for the countries of the Western Balkans. Given that energy production centers and energy consumption centers are often spatially distant, and that it is necessary to build infrastructure in order to connect these centers in an efficient and economical way, it is necessary to create preconditions for investment in energy infrastructure, and the first prerequisite is political and economic stability and a known legal and regulatory framework for investment.

The Energy Community, given its geographical location, should be a link between security of energy supply between the European Union's energy market as a consumer and the Caspian, North African and Middle Eastern gas reserves. In that way, the security of energy supply of the Energy Community from the mentioned sources would be achieved at the same time, but also by using domestic reserves of natural gas, coal and hydropower potential. In this sense, energy security implies the activities of the public sector of the signatories in order to achieve economic and social progress and a high level of employment, balanced and sustainable

development, as well as the creation of areas without internal borders for energy flows. [Nešković, 14, 35]

The area of activity of the Energy Community includes the implementation of European Union regulations in four basic interrelated areas: energy, improvement and protection of the environment, competition and renewable energy sources. In addition to these areas, the implementation of European Union standards in the field of electricity and natural gas is required, as well as the implementation of regulations on energy efficiency. The main goal of the Energy Community is to create a stable market, which is unique, built in a way that attracts investment in energy infrastructure, all with the aim of achieving access to energy capacity by member states. The importance of creating a regulatory framework for investments in energy networks and for energy trade transmitted through these networks was especially emphasized, in order to create the possibility of a balanced energy supply of all areas of the Energy Community in the geographical sense.

The need to connect energy networks within the Energy Community market with other markets was emphasized in order to achieve energy security, competition in the energy market, use of renewable energy sources, improvement of the environment and efficient use of energy.

The Energy Union is a plan of the European Commission that was started in 2015 with the goal of ensuring favorable, safe and sustainable energy for all countries of the European Union. The European Union's annual energy import expenditure is around € 350 billion, making the EU the world's largest energy importer. All measures and activities related to the Energy Union are of interest to the countries of Southeast Europe, and especially to countries that aspire to become members of the European Union. Most EU member states depend for the most part on foreign suppliers, which makes them extremely vulnerable in terms of energy security. The European Union also needs to modernize the outdated energy infrastructure in some of the Member States and to fully integrate its energy market and ensure the harmonization of national energy prices. The creation of a fully functional energy union will enable greater choice and lower prices for EU consumers. Basic indicators of energy security of the European Union [Cherp, Jewell, 27]:
1. The European Union imports 53% of the total energy it consumes,
2. Six EU Member States carry out their entire gas imports through only one supplier,
3. 75% of housing in the EU is energy inefficient,
4. 94% of turnover depends on oil and oil derivatives, of which 90% are imported,
5. Wholesale electricity prices in EU countries are higher by 30%, and wholesale gas prices by 100% compared to the United States.

The strategy of the Energy Union consists of five dimensions that are closely interconnected and that are designed to increase energy security, sustainable development and competitiveness, and these dimensions are:
1. Energy security, solidarity and trust: obtaining energy from different sources, better distribution between Member States and greater efficiency in energy use in all EU countries;

2. Fully integrated internal energy market: enable the free flow of energy through all countries of the European Union with the help of appropriate infrastructure, without any technical or regulatory barriers in order to provide the best energy supply to consumers;
3. Energy efficiency: reduce energy consumption from non-renewable energy sources in order to reduce emissions and preserve energy sources that already exist in the European Union, ie to reduce dependence on energy imports;
4. Climate policy-decarbonization of the economy: implementation of measures to reduce emissions of harmful gases that lead to climate change and encourage investment in new infrastructure and technology in order to minimize emissions of harmful gases and
5. Research, innovation and competitiveness: support for research in the field of new low-carbon technologies, support for adequate projects and cooperation with the private sector.
The Energy Union is focused on the most important goal of the European Union, which is to improve energy security. However, for now, there is no clear consensus on the goals to be achieved or on the ways to achieve these goals.

There are no winners in energy crises and wars - they are all losers. Reduction of production in consumer countries (which affects the increase of their import dependence), lack of investment in energy infrastructure, political uncertainties and conflicts directly affect the level of energy security of the region and the world, reduction of intensity and slowdown in energy policies. For example, the solution for the European Union regarding its gas security is known, and it concerns the need for diversification (which is more in the domain of the story than reality), but also the cooperation of the EU in order to define and implement a single energy policy. It is clear that without a unified policy, there is no and will not be security of supply, and today we are living in a constant energy crisis.

The fact that the first and second gas crises were marked by the initial days of 2006 and 2009, does not mean that they lasted that long. They lasted before that, and they continue today. It is clear that it is not possible to achieve development if energy supply and demand do not meet, so the opinion that countries with energy resources are in a better position does not correspond to reality. Will Russia, for example, benefit or harm from shutting off gas to Europe? Can he take with him billions worth and thousands of kilometers long gas pipelines - oil pipelines? What would happen to Russia's economy if this country's budget were reduced by 50%, if EU countries stopped using and paying for gas? It is known that 94% of the total gas exports from Russia go to European countries. In Europe, Russian gas accounts for 38% of European imports. Projections of the future warn both, and the future must be taken into account today. The needs for gas imports to the EU (in 2030) will increase by 5-6 times, in relation to its gas production. Some European countries have a significant share in gas imports from Russia, such as Germany and Italy, so it is not surprising that their primary focus is on bilateral agreements with Russia, to the detriment of European unity. In recent years, Gazprom has concluded contracts with Eni (Italy), Gaz de France (France), Gasunie (Netherlands), Basf (Germany), E.On Ruhrgas (Germany). Desperate for access to energy, and, of course, profit, European companies are playing against each other, in order to get the best possible conditions and advantages. If some do not want to accept the rules of Moscow, the competitor will quickly agree to them (leaving the first company with nothing). In addition, this economic and energy interdependence affects

the EU's foreign policy because it reduces its ability to influence and support key alliances in Europe and Asia, especially the Balkan countries, Central European countries, and Asia, such as Ukraine, Georgia, Azerbaijan, and Kazakhstan. and Turkmenistan, which are major transit-producing countries. Russian gas also accounts for 98-100% of consumption in Belarus, Estonia, Finland, Georgia, Latvia and Moldova.

As we have already pointed out, several projects and difficulties have pushed the issue of energy security to the top of strategic and political issues in Serbia. First of all, it is about the gas crisis from January 2009 and the "South Stream" project. The gas crisis from 2009 and the then Ukrainian-Russian gas dispute brought to light the fact that Serbia is almost completely dependent on only one source of gas and only one supply route. After the abolition of the South Stream project, debates on how to ensure the country's energy security intensified. It is a surprisingly good fact that Serbia's energy dependence in 2013 was 23.5% and that it was the fourth country in Europe in terms of minimum dependence on foreign energy sources. From neighboring countries, Croatia's energy dependence was as high as 52%, Macedonia's 48%, Montenegro's 26% and Albania's 25%.

This result, however, should be viewed in the context of halved industrial production in our country compared to a quarter of a century earlier. The data refer to the consumption of primary energy, which is significantly higher (by 50%) than the consumption of final energy. Namely, primary energy is used for the production of electricity, fuel oil, gasoline… The required amount of coal (participates in the consumption of primary energy with 50%), is provided from domestic production with more than 90% (while metallurgical coke is imported). Coal consumption is predominantly related to energy production by transformation into electricity, primarily in thermal power plants. Unlike coal, about 75% of oil and its derivatives and 80% of natural gas are provided from abroad. Petroleum products (primary gasoline, liquefied petroleum gas, Eurodiesel, base oils) are imported. Currently, most gas is imported from Russia, with a tendency to be completely tied to Russian gas, and the situation is similar with oil and oil derivatives (part of the oil and gas produced in Serbia will decline in the coming years). Of the other energy sources, the most important are hydropower and biomass, ie wood (together they make up about 1/8 of primary energy consumption).
According to World Energy Outlook estimates from 2015, demand for primary energy is expected to increase by 37% by 2040, with natural gas consumption rising by 50% and oil consumption by 10%. These trends will have unfavorable consequences for Serbia's energy security. This can be seen based on the estimates of the Energy Strategy of Serbia from 2014, where it is projected that import dependence, when it comes to natural gas, will be as high as 97% in 2030, while oil imports will increase to more than 90% of total consumption. If we look at the countries in the region, the International Energy Security Risk Index (IESRI) in its 2015 edition puts Romania in 15th place among the 75 largest energy consumers in the world, which is the best result of all the Balkan countries. Other countries lag far behind - Bulgaria in 57th place and Serbia in 61st place - only Ukraine, Uzbekistan, Turkmenistan and Singapore are behind it. Compared to the average performance of OECD countries after 1990, Romania has shown a steady trend of improving its energy security position from its most difficult moment in 1990 (53% higher than the OECD average) to its best estimate in 2009. (1% lower than the

OECD average) in anticipation of a slight deterioration in the country's performance in the coming years [Bouzov, 10].

In order to strengthen political power in the world, countries are trying to increase the competitive power of their economies on the world market, because political power has been used since time immemorial to achieve economic goals. In that sense, geoeconomics can be defined as a set of measures for mastering the economic space that countries take in order to achieve the goals of political supremacy. Today, geoeconomics has become both the purpose and the means of geopolitics as a practice. Bearing in mind that energy security is one of the key tasks of the 21st century of all humanity, we encounter the fact that it is necessary to systematically influence the sustainability of the energy sector in general. Only communities that produce enough energy for their needs in the future will be able to survive in the existing system. In fact, with the industrial era and technological development, world energy consumption is experiencing an incredible progression. In the last few decades alone, energy consumption has increased by a factor of 100 compared to the 17th and 18th centuries. The hunger for energy is constantly growing, which increases security risks. In modern security studies, a distinction is made between national, social and human security. Security does not depend on a specific event, but also on people's attitudes, which means that it is necessary to keep in mind the influence that people's ideas, interests and behavior have on security.

Geo-economy Concept of the Countries and the Great Powers

Located in the area of centuries of mixing of different cultures and civilizations, religions and zones of influence, on the border of continents, the Western Balkan subregion Southeast Europe region has always been a training ground for the conflict of interests of great powers. It was objectively from the time of Ancient Greece and the Roman Empire, through the dominant influence of Byzantium and then the Ottoman Empire, political and cultural influences of the Austro-Hungarian and Russian Empires, to the great suffering in the World Wars and the latest local wars of the 1990s. Decades of conflict during the Cold War erupted across the region. It is important for our research to see what the New Millennium has brought in terms of forms of geopolitical conflict and the spread of political influence, especially from the aspect of geoeconomics. Western Balkans subregion of the countries are in a zone of conflicting geopolitical interests. in that sense, they are under strong political, economic and military pressures. To that end, they are increasing their influence politically, economically, in the media and militarily. On the other hand, Russia is trying to regain its political and economic influence in this area, with which it is connected by centuries-old religious and ethnic closeness. It lost that influence with the fall of communism, so it is trying to regain it through economic investments and media presence [Nešković, 13, 15].

Theoretically, geoeconomics is a "cross-border political economy" based on "unfair competition". The rules on "fair competition" that apply in domestic markets do not apply to geoeconomics. Empirically, geoeconomics is becoming a substitute for the "declining role of geopolitics." Its task is to build a strategy for the action of the state, so that it can provide its companies and its economy with a competitive advantage over other companies and economies.

Every country must participate in the geoeconomic competition. She can not only defend herself, but also perform. That also applies to Serbia. Serbia's resilience to geopolitical pressures is in administrative proportion to its geoeconomic resilience. The policy of neutrality is a shelter from the risk of choosing between East and West. Neutrality does not have a sufficiently reliable economic basis either on the internal or external level, so it depends more on the readiness of external forces to allow it than on the economic strength of Serbia to defend it. Necessary conditions for strengthening geo-economic resilience are: capable state administration, re-industrialization, protection of the domestic economy and encouragement of the rise of domestic entrepreneurship. Only in this way can Serbia become a "land of hope" again. In any case, one must keep in mind the proven experience: "Whoever does not feed his army, will feed someone else's."

It is debatable whether geoeconomics has a separate theory, subject and method, which are necessary conditions for it to be recognized as a science. But there is a reality that no recognized branch of science can explain: the conflict of economic interests on a planetary scale. From the standpoint of economic theory, geoeconomics is a cross-border political economy based on "unfair competition". The rules on "fair competition" that apply in domestic markets do not apply to geoeconomics. In geoeconomics, the official ideology of "free international trade" does not apply either. From the empirical point of view, geoeconomics is becoming a basic parameter of the international order ", since military power is losing the traditional role that determined the hierarchy of states. The task of geoeconomics is to build a strategy for the action of the state, so that it can provide its companies and its economy as a whole with a maximum competitive advantage in relation to other companies and economies. Today, the hierarchy of states and their influence on the international stage are increasingly determined by economic reasons. Governments, in an effort to maintain or strengthen their position, seek to "gain a 'geoeconomic' substitute for a declining geopolitical role."

Energy Security Context of Country of the Western Balkans

It should be noted that energy began to play an important role in global geopolitics in the third quarter of the 19th century, and that this trend has only developed to this day, and the importance of energy has grown. Energy policy has influenced some countries to become large or regional powers, military or economic alliances have been established because of energy goals, and wars have broken out. Simone Tagliapietra states that every international order in modern history has been based on energy resources. Carlos Pascual warns that energy policy will determine the survival (or disappearance) of the planet in the coming decades. Since energy policy (or, as Pasqual also states - energy geopolitics) has always been the driver of global prosperity, international security (in the broadest context, therefore, the whole world) will depend on access to energy sources and energy market stability. Following the classification set authors and linking it to the issue of energy security, it can be concluded that there are correlations between the distribution of the most important oil and natural gas sources of foreign policy positioning of states, causal links of certain political decisions aimed at either by building strategic pipelines) or to prevent the other side from realizing such plans, and even the outbreak of wars creating zones of long and continuous instability in certain parts of the world.

The NATO 2020 Strategic Concept defines that the energy security of all members is one of the priorities in every respect, and the foreign policy approach was determined accordingly. After the election of Donald Trump as President of the United States, we are witnessing a kind of brutalization stated in the NATO 2020 concept. The pre-election slogan Make America Great Again applied in the energy security sector is: energy domination. That is why the energy strategy of the Trump administration emphasizes that energy diplomacy will take a prominent position on any thinking about US foreign policy. Energy security has become one of the most important issues for ensuring the national security of the United States, and energy diplomacy is an important (determining?) Factor in the overall foreign policy of the country. [Prontera, 51] At the same time, energy security is among the determining factors in the foreign policy of other actors. Despite being members of NATO, and thus partners of the United States in defining a whole series of decisions to which they must adapt, Germany and Turkey act independently when considering energy security. Both countries are cooperating closely with Russia, connecting with Russian natural gas sources through the "North Stream" and "Turkish Stream" pipelines. Russia, after the escalation of the crisis in Ukraine and the confrontation with NATO and the EU, does not want to be dependent on Western European consumers, so it turns to China, building the "Siberia Power" gas pipeline, currently one of the longest and with the largest capacity in the world. For China, however, as for any other country (despite excellent relations with Russia), it is important not to depend on one supplier, which caused the construction of alternative supply routes, the first of which was established with Turkmenistan, and through the territory of Kazakhstan. and Uzbekistan.

Another illustrative example of the impact of energy security on geopolitics comes from the Middle East. Representatives of the Syria, Iran and Iraq signed an agreement on the construction of the so-called Friendship Gas Pipeline (projected capacity of 40 billion m3 per year, from the Iranian South Pars site, through Iraq and Syria, to the bottom of the Mediterranean Sea to Europe, bypassing Turkey). just before the outbreak of the civil war in the suburbs of Damascus. The authors directly link the later activities of the Qatari leadership, which together with Saudi Arabia established a new project (it also included Jordan and again - Syria), in order to "throw" Shiite Iran out of the game. The first project was supported by Russia, while the USA and the EU showed interest in the second. In addition to regional actors, directly involved in this work, all involved global actors, guided by their interests.

It was by no means acceptable for the United States for European countries to buy gas from Iran, because that would bring new political problems in the Middle East, Tehran's influence would strengthen, and due to the continuous foreign exchange inflow, Iran's military power would probably grow. At the same time, it remained unacceptable for Russia to sell natural gas from Saudi Arabia on the European market, as that would jeopardize their position as the largest seller and, in that context, the most important bidder. The outbreak of the war in Syria, which destabilized the entire region and left major consequences for future relations, has its "energy background". Guided by the principle of ensuring energy security, the states plan their own foreign policy strategies in certain geographical areas in the long run, try to direct political processes in the desired direction and thus protect their own interests. From the point of view

of energy security, the actors of international relations use geopolitics as a systemic approach in order to ensure state security, social development and economic stability.

The issue of energy security is greatly exacerbated by the rapid development of the BRICS countries (Brazil, Russia, India, China and South Africa), which are large consumers of energy and / or energy, and thus there have been and will be significant changes in the geopolitical scene. these countries have significant power to influence global developments. As a result, major changes are taking place in macroeconomic policy and financial stability, especially in countries and regions that are large consumers of energy. This paper will present the results of research on the application of geoeconomic approach to measuring energy security in the European Union, taking into account the fact that energy security is no longer affected only by security of supply, but also a large number of factors of geopolitical and geoeconomic nature. The European Union was chosen for the assessment because, on the one hand, it is a large consumer of energy, and on the other hand, it is faced with numerous problems concerning the import of energy, primarily natural gas.

The European Union's dependence on gas imports from the Russian Federation is a phenomenon that largely determines the world political scene. Efforts to improve the position of the European Union to a certain extent have so far shown only partially good results, with a tendency to further use energy as a political weapon. The crisis in Ukraine has not brought the positions of the EU and Russia closer, but has created additional misunderstandings and created a potential hotspot. From the aspect of the European Union, the best way that can improve energy security is the pressure on the banking and financial sector of the Russian Federation, which is evident from the sharp drop in crude oil prices that occurred after 2015. In addition, the European Union can use all first-class banking instruments, but there is evidence that it is not always based on realistic indicators. One way to put a country in a favorable or unfavorable position in terms of access to the global banking market and energy trade (as in other areas) is certainly speculatively defining its credit rating.

There is evidence that the three largest credit rating agencies did not properly assess the situation in some European Union countries during and after the 2008 financial crisis, with these countries being given a more favorable credit rating, putting them in a more privileged position. The higher credit rating of a certain country has the greatest impact on increasing the credit rating of companies of companies operating in that country, which are included in the world energy market, and which thus artificially strengthen. The credit rating looks at a number of indicators, the processing of which provides an assessment of the political and economic strength of a certain government, as well as the ability of a certain country to be resistant to financial and political shocks. In a word, credit rating is an indicator of resilience to geopolitical changes and can therefore be considered as a factor of great impact on energy security. [Nešković, 14, 39]

Credit rating assessments are created by the three largest agencies: Standard & Poor's, Moody's and Fitch Ratings, whose assessment is based on a defined methodology, with certain differences that exist in the interpretation of the results. Although new credit rating agencies

are starting to work, they are currently present on the world stage and the assessments of these agencies are most often used. It should be emphasized that the indicators used to assess a credit rating have different effects on the final result. Currently, the European Union is seen as a region with a stable and relatively high credit rating, although it is highly dependent on energy imports. The long-term goal of the European Union is further centralization and expansion of its financial market, which will greatly affect the European Union's ability to achieve and maintain the desired stability and independence in terms of energy supply. The ratings given by these agencies for certain countries have often proved to be calculating, poor or pretentious. There are a large number of studies that question the reality of credit rating assessments, that is, they indicate the possibility that credit rating agencies with their assessments even create or contribute to the deepening of the crisis in certain countries and regions. [Ymeri, 59]

In addition to the impact that a credit rating assessment has on the national economy, it has been fully demonstrated that there is a clear link between the ratings given to a particular national economy and the ratings received by companies and banks operating in that country. In addition, it has been proven that there is a collision between the ways of assessing individual credit rating agencies, as well as the inconsistent impact of the assessments of individual agencies on future economic trends in the observed country. All critics of the methodology of work and the role of credit rating agencies agree that all the mistakes of credit agencies seriously affect the stability of the financial sector, and thus the trade in energy, i.e. energy security in general. The role of credit rating in the world energy market is of paramount importance, because only countries with a high credit rating have a banking sector that is able to finance energy imports because it has first-class banking instruments, with banks in BRICS countries under special pressure. ratings have difficulty participating equally in energy trade. Due to all the above, a more detailed analysis of the impact of the credit rating on the energy security of energy importing countries at a given moment is of special interest. With the fall in oil prices during 2015 and 2016, the corporate credit rating of the largest oil companies was sharply reduced to the lowest level. In addition, the impact of speculative activities has increased. Due to all the above, the inclusion of a credit rating in the quantification of energy security finds its full justification.

Conclusion

The security of the countries of the Western Balkan subregion is indisputably expressed as a significant determinant from the aspect of the modern understanding of international relations and geopolitical theory since its inception. With the creation of modern nation-states, geopolitics as a theory but also as a practice "absorbs" itself through other sciences such as security, creating a completely separate scientific discipline, geosecurity and assigning it one of the leading places on the scale of state and national interests. Given the important historical, civilizational as well as cultural position of this immeasurably important geographical hub, Western Balkan and the Southeast Europe has always had an important place in the context of international relations.

The state of Serbia and the Western Balkans shares the fate of the vast majority of countries that do not have sufficient quantities of their own energy but are doomed to import, so for example almost all quantities of crude oil and natural gas are provided by imports. Coal is an energy source when Serbia has it in large quantities, but the problem with coal is its exploitation, where environmental pollution occurs. The cleanest and safest source of energy in the countries are large hydropower plants, but the problem is that they can provide only about 30% of total energy needs.

With or without the participation of countries of the Western Balkans, the European Union will continue to develop its energy system in the 21st century. Serbia is not an unequivocal state and in such a situation it can gain certain advantages. As the central country of the region, it is given the opportunity to become an energy distribution center, but much more than that. In the partnership between NIS and Gazprom, Serbia is already entering the international scene with the goal of becoming a country with a leading energy company, not only in fuel distribution but also in the production of electricity from gas sources. In this way, the legislation of the European Commission on the reduction of harmful gas emissions, protection and preservation of the environment is realized. Paradoxically, the fact is that Europe is less afraid of Russian gas than Serbia. Is it out of fear or insufficient vision of the future, but the fact remains that the Serbian territory is still not crossed by any important gas main route, while in Europe there is a built network of very important gas pipelines.

Energy security is part of the national security system of the state and requires additional and special study in order to reach a solution because the general picture and assessment of the position of the state of the Western Balkans subregion of the Southeast Europe not only on energy security but also other aspects is very unstable. In addition to energy issues, the country faces numerous political pressures that condition its further progress. Energy envy, geographical location, political and internal pressures will long be a challenge for all actors who exist on the scene and are involved in the process of planning, creating and ultimately implementing activities that would ultimately result in energy security and a better society as a whole. Is this way, the set hypotheses were proven and the scientific and social justification of research on the current topic was confirmed.

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Influence of macroeconomic indicators in the development of the Macedonian Stock Exchange - period 2017-2022

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ABSTRACT

In this paper, through different methods, are analyzed the macroeconomic effects on the development of the capital market, that is, the Macedonian Stock Exchange. The regression analysis shows the relationship between the dependent variable-performance of the Macedonian Stock Exchange, shown through the MBI10 stock index and the independent variables (economic growth, inflation rate, interest rate and exchange rate). Secondary data published by the State Statistics Office, the National Bank of the Republic of North Macedonia and the Macedonian Stock Exchange were used. Also, within the framework of this paper, a comparative analysis of the movement of macroeconomic indicators in the given period is shown.
Through the regression analysis, it was established that the independent variables (economic growth and inflation) have a positive and significant influence (impact) on the dependent variable (the value of MBI10). While the other variables (interest rates and exchange rate) have an insignificant and negative impact on the dependent variable (the value of MBI10).
Through the comparative analysis, analyzing the quarterly data in the period 2017-2022, we can conclude that the value of the stock market index MBI10, which contains the shares of the 10 best listed companies on the stock exchange, has been in constant growth in the last 5 years, taking into account the shocks that happened to the global economy, not neglecting the national one as well. In 2022, we have a fall in the value of the index, as a result of macroeconomic and global destabilization. In the case of interest rates, we have a slight decrease until the beginning of 2022, when interest rates begin to rise.

Keywords
Index; Securities; Interest rates; Inflation

Introduction

For a better functioning of the economy, the existence of a developing securities market that will contribute to a more stable financial market, and thus attract foreign investors to invest in our economy, is indisputable.
The importance of foreign investment is particularly important for economies in transition and developing countries, given the lack of domestic savings to achieve higher growth rates.
Investing in the capital market also depends on the political situation in the country, and on the movement of the economy at the global level. In countries where there is an unstable political situation, the work of the Stock Exchange declines, in contrast to stable political countries, where stock market operations take place continuously.
The stock market is a mirror and barometer of general developments in society (Dimitrova, 2015). Taking into account the importance of the stock exchange in the overall development of the financial stability of the state, of particular importance is the relationship of the development of the capital market with macroeconomic indicators as indicators of the economic and financial stability of the entire state. With this analysis of the influence between the above indicators, we can conclude which indicators have a positive and which negative influence on the stock exchange operation.

Literature Review

Macedonian Stock Exchange

The Macedonian Stock Exchange is a relatively new market compared to other capital markets in the world. The beginnings appear after the transition of our country from socialism to pluralism, that is, the transition period. On September 13, 1995, it was held the Founding Assembly of the Macedonian Stock Exchange AD Skopje. The establishment of the Stock Exchange was realized with the technical assistance of the British Know-How Fund, provided by the Government of the Republic of Macedonia[1]. On March 28, 1996, the stock exchange bell rang for the first time in the Republic of Macedonia and the first trading day of the Stock Exchange took place. The Stock Exchange was traded twice a week, on Tuesday and Thursday. On October 16 of the same year, the Macedonian Stock Exchange was accepted as a full member of the Federation of Eurasian Stock Exchanges.

The stock exchange was founded as a joint venture company and was intended to operate on a non-profit basis with a founding capital of 500,000 euros. The stock exchange was founded by 19 members: 13 banks, 3 insurance companies and 3 savings banks.

The basic governing bodies of the Stock Exchange are:

- Shareholders assembly
- Board of Directors
- Executive director

Shares and bonds are traded on the Macedonian Stock Exchange for long-term securities, and other instruments (convertible certificates, shares, etc.) are traded with special approval from the Securities Commission of the stock exchange. Trading takes place four times a week through the stock exchange's electronic trading system, according to the order system. The clearing of the transactions is carried out by the Stock Exchange, and the settlement and re-registration of the ownership of the securities is realized through the Central Depository of Securities Ad Skopje (Vitanova, 2003).

The success of the financial market is reflected through various indicators to reveal the development of the financial market, the so-called stock market indexes. An index is a group or basket of securities, derivatives or other financial instruments that represents and measures the performance of a particular market, asset class, market sector or investment strategy. In other words, an index is a statistically representative sample of any observable set of securities in a given market segment. For example, the well-known S&P 500 is a representation of the US capital market segment. In the case of the Macedonian Stock Exchange, we will explain one of those indices - the Macedonian Stock Exchange Index (MBI).

From 01.11.2001, the Macedonian Stock Exchange AD Skopje started calculating the Macedonian Stock Exchange Index (MBI), which was composed of the five most liquid stocks on the Macedonian Stock Exchange: Alkaloid AD Skopje, Europe AD Skopje, Komercijalna banka AD Skopje, Makpetrol AD Skopje and Toplifikacija AD Skopje. MBI was a price-unweighted index, which as the first stock market index in the Republic of Macedonia, performed its function of introducing an aggregate indicator for quantifying stock market movements[2]. Even during the introduction of MBI in 2001, it was concluded that after a certain time and further development of the capital market, the Macedonian Stock Exchange should introduce a weighted index. For those

[1] https://www.mse.mk/mk/content/22/1/2008/history

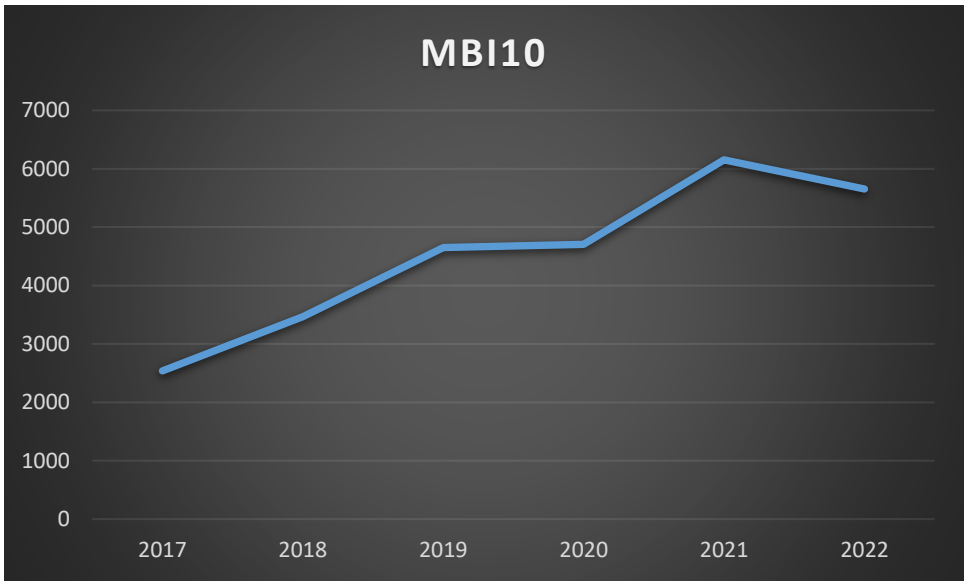
[2] https://www.mse.mk/mk/content/13/3/2010/structure-of-index-mbi10

reasons, the new Macedonian Stock Exchange Index (MBI10) was introduced on January 4, 2005, whose weighting through market capitalization enables a more realistic presentation of price movements on the Macedonian Stock Exchange. The table below shows the structure of the MBI10 Index.

Table 1. Structure of MBI10

Publisher	Code	Total issued shares	FF Market capitalization on the date of the last revision in EUR (before adjustment)	Weights from last revision
Alkaloid Skopje	ALK	1.431.353	356.190.540	20,00%
Stopanska Banka Skopje	STB	17.460.180	20.543.392	4,92%
Granit Skopje	GRNT	3.071.377	43.751.890	10,48%
Komercijalna Banka Skopje	KMB	2.279.067	359.134.266	20,00%
Makpetrol Skopje	MPT	112.382	82.188.885	19,68%
TTK Banka Skopje	TTK	907.888	11.678.526	2,80%
Makedonski Telekom Skopje	TEL	95.838.780	23.179.739	5,55%
Makedonijaturist Skopje	MTUR	452.247	18.696.028	4,48%
NLB Banka Skopje	TNB	854.061	42.523.211	10,18%
UNI Banka Skopje	UNI	545.987	7.939.450	1,90%

Historically, the Macedonian Stock Exchange, shown through the MBI10 index, is not a very developing stock market compared to other stock markets at the regional and world level, therefore the data intended for comparative analysis have been taken for the last 5 years, years where we see increased market growth in terms of increasing the value of the MBI10 index, as well as increasing the market capitalization of the stock exchange. Graph 1. shows the data on the price movement of the MBI10 index, the period analyzed is shown on the horizontal axis, and the MBI10 value expressed in index points is shown on the vertical axis. From the comparative analysis, we can conclude that there is an increase in the value of the stock market index MBI10 from 2538.86 index points in 2017 to 6153.48 index points in 2021, or for a period of 4 years we have an increase in the value of the index by 142.37%.



Graph 1. The movement of the value of MBI10 - period 2017-2022

Table 2. shows the data on the value of MBI10 for the months in 2022. and we see oscillations in the value of the index, but compared to December 2021 we have a significant decrease in the value of 8.14%.

Table 2. Value of MBI0-monthly 2022

Month	MBI10
January	6226.37
February	5819.46
March	6097.34
April	6278.19
May	6070.62
June	5787.23
July	5880.2
August	5764.57
September	5586.34
October	5655.25
November	5557.94
December	5652.33

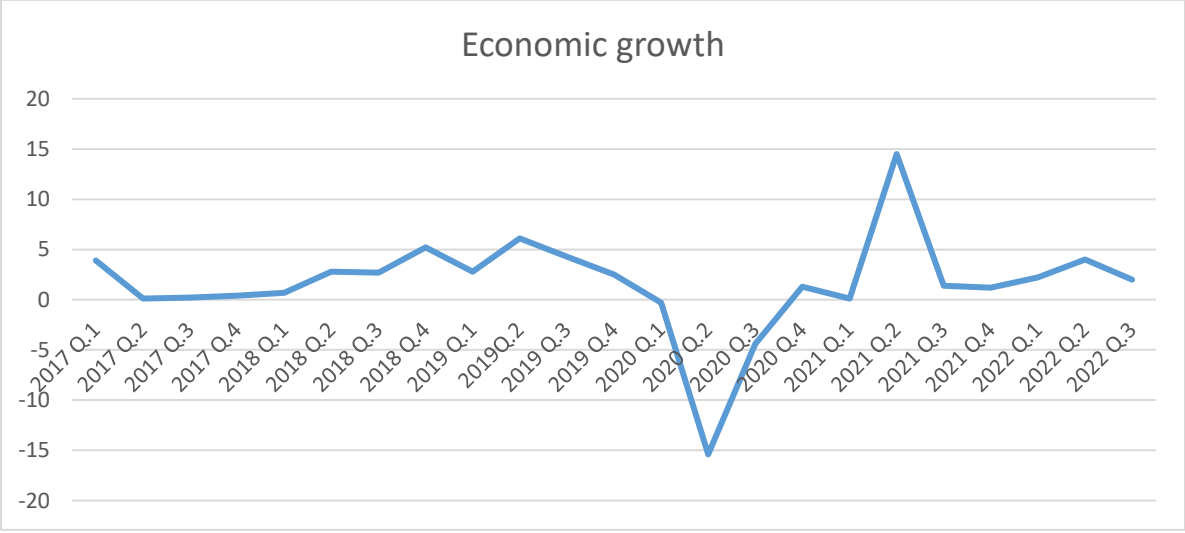
Macroeconomic indicators in R.N.M 2017-2022

Macroeconomic indicators as indicators that show us the real state of the economy as a whole, also show us the movements of the most important economic phenomena and occurrences for the state economy as a whole. In order to be able to make a good analysis of the effects of macroeconomic indicators on the capital market, we will first show the movements of some of these indicators: gross domestic product, inflation, interest rates and exchange rate in the period 2017-2022.

Gross Domestic Product (GDP)- The definition of GDP according to Mankiw (2010) is: Gross Domestic Product, or GDP, is often considered the best measure of how well an economy is doing. This statistic is calculated every three months by the Bureau of Economic Analysis, part of the US Department of Commerce, from a number of primary data sources. Primary sources include both administrative data, which are byproducts of government functions such as tax collection, educational programs, defense, and regulation, and statistical data, which come from government surveys of, for example, retail establishments, manufacturing firms, and agricultural activities. The purpose of GDP is to summarize all of this data with a single number that represents the dollar value of economic activity over a given period of time. Summarized GDP represents the value of all goods and services within the national economy in a certain period of time (usually 1 year). The economic growth data presented in this paper are shown as a percentage of the difference in real GDP between two analyzed years.

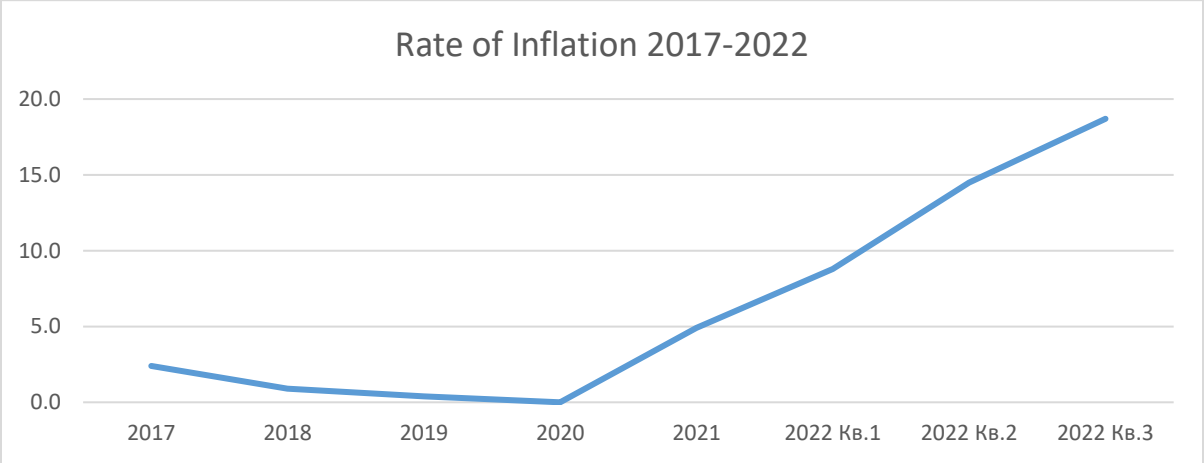
The Republic of North Macedonia as a country is characterized by economic growth of about 2-3% on an annual basis, with the exception of the period 1991-1995. In the period 2010-2019, economic growth varies from 3.4% in 2010 and maintains a constant growth of 2-3% with an upward trend in 2019 (Xhaferi & Mehmedi, 2022). The exception is the period from 2012 when the economy of North Macedonia recorded a decline (entered a recession phase) of -0.5% (State Statistics Office, 2021).

At the beginning of 2020, that is, in the first quarter, a period that coincides with the beginning of the global pandemic, noticable is the effect of slow economic growth, in other words, the economy is already starting to enter recession. The biggest recession in R.N.M is the period where the recession recorded a negative double-digit number, i.e. -16.4%. This drastic reduction comes as a result of the reduction of the Gross Domestic Product at the beginning of the year, that is, from 159,090 million denars in the first quarter to 141,610 million denars in the second quarter of 2020. In the future period, an improvement in economic growth is seen - a period of recovery of the global economy from the consequences of the global pandemic COVID-19. Thanks to this analysis, we can say that the improvement in economic growth does not last long, more precisely until the second quarter of 2022, where as a result of global factors and the destabilization of world markets, the economy of R.N.M begins to take a direction of decreasing values, hopefully that this trend will not result in entering a recession.



Graph 2. Rates of economic growth R.N.M 2017-2022

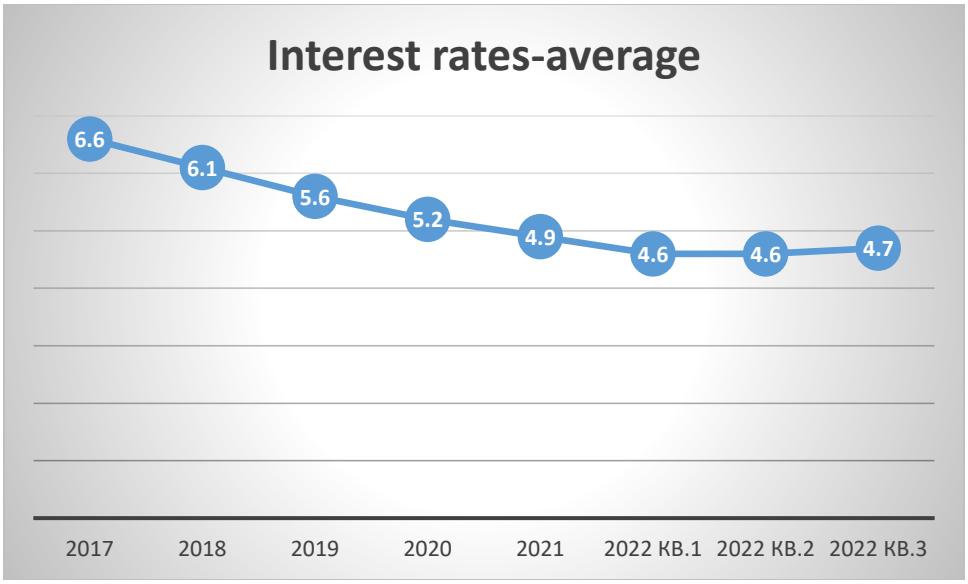
Inflation- Acording to NBRM[3], in the third quarter of 2022 the annual inflation rate accelerated further and reached an average of 17.2%. Domestic inflation still mostly results from external factors, that is, from the increase in the import prices of food and energy, including the domestic price of electricity and thermal energy, which are influenced by developments in the global energy market. Analyzing through the years that are the subject of this research paper, we can conclude that the annual inflation rate in 2017 was 2.4%, holding a solid level until the end of 2021. and the beginning of 2022, where international developments contributed to the deterioration of the situation (see graph 3).



Graph 3. Rate of Inflation 2017-2022

Interest rate- Interest rate as an essential macroeconomic variable, it is capable of changing, transforming and redirecting the patterns of savings, investment, inflation and production of a country (Umeora, 2010 as cited in Okoi & Comfort 2022). Also according to Mishkin (2010) the price of bonds is negatively correlated with the interest rate, so interest rates at a higher level will reduce the expected yield of long-term bonds, and this results in falling demand for bonds. Our data is taken from the NBRM's annual reports on weighted interest rates on total denar loans granted for the period 2017-2022.

[3] Quarterly Report November 2022



Graph 4. Interest rate in R.N.M

Exchange rates- According to Xhaferi (2013) the exchange rate represents the relative price of two currencies, such as the price of the Japanese yen expressed in US dollars, the price of the pound in euros or the price of lek in denars. Due to the great need for the development of international financial markets, it is obvious that the comparison of two currencies is very important in both international trade and capital markets. Also, the strength of the national currency is a sign that tells us how developed the economy of that country is and how internationally the country is involved in financial transactions. As a rule, reduced exchange rate shows us that for a certain amount of foreign currency, we can convert a smaller amount of domestic currency (it automatically means that our currency strengthens compared to the foreign currency) and vice versa.

A study conducted examined the relationship between two financial variables - the exchange rate and stock prices in India. For that purpose, daily stock prices and daily exchange rates were considered. Through simple correlation and Granger Causality test, it was concluded that the correlation results show a negative relationship between exchange rates and stock prices (Srivastava A. 2005 as cited in Bagh et al., 2017). In our research paper we will present the data on the exchange rate of the denar against the US dollar taken as a quarterly average during the years 2017-2022.

The impact of macroeconomic indicators on stock markets

From many authors in the economy, we can conclude that there is a connection between the financial stability of the stock market and the macroeconomic situation of the country. Spasoska & Hristoski (2022) found a positive relationship between the Gross Domestic Product rate and the stock market turnover ratio and confirmed the results of related research that capital market development can accelerate economic growth. Also, the inflation rate has a positive and statistically significant impact on stock market turnover in relation to GDP. Their empirical study is based on the analysis of time series data based on relevant secondary data sources, based on the use of the Johansen cointegration test and the development of an appropriate vector error correction model (VECM) to estimate the relationship, the impact, size and significance of the determinants

that support and affect the liquidity of the stock market in North Macedonia in the period from 2008- Q1 to 2021- Q4.

Anifowose (2021) concludes that interest rate significantly affects stock market performance in Nigeria. The reason is that of the four independent variables considered in his study, the interest rate appears to be one of the two that has shown a significant effect on stock market performance. The results of the Jarque-Bera (JB) test show that all data series used in the study were normally distributed, while the Philippe Ferron (PP) test revealed that all variables were stationary at first difference. The regression results (OLS) show that the interest rate has a significant negative impact on stock market performance. The results of the cointegration test confirm that there is a cointegrative relationship between macroeconomic indicators and stock market performance.

According to Almira (2021) interest rates have a significant and negative impact on the development of the Indonesian capital market. She in the study through regression analysis, it expresses the value of the regression coefficient that is greater than 1, it means that the value of the elasticity of the interest rate for the development of the Indonesian capital market shows that the increase in the value of the interest rate is elastic to the development of the Indonesian market of capital. In his study Molefhi (2019) as cited in Babarinde & Ogbeide (2022) concluded that both inflation and money supply show an affirmative and significant relationship with the development of the stock market in the short term, while the exchange rate showed a negative relationship.

Methodology

As a dependent variable, we present the value of the index (MBI10), as an indicator of the performance of the Macedonian Stock Exchange, and the independent variables: Economic Growth (EG), Interest Rate (INT), Inflation Rate (INF) and Exchange Rate (EXC). Economic growth, interest rates and inflation rate are expressed in percent (%), while the exchange rate is expressed in Macedonian Denar (MKD) against the US Dollar (USD). MBI10 is expressed in index points. In the model, the data is quarterly, in the period from the first quarter of 2017 to the third quarter of 2022. The data are secondary, taken from the respective institutions that publish them on a quarterly basis. The data analyzed were processed through the computer program Excel.

The model can be displayed as a function:
MBI10= f (EG, INT, INF, EXC)

Variables:
MBI10- Macedonian Stock Exchange Index
EG- Economic Growth
INT- Interest rate
INF- Inflation rate
EXC- Exchange rate

Through regression analysis, we will be able to determine the connection and influence of the independent variables on the dependent variable.

$$MBI10 = \beta 0 + \beta 1EG + \beta 2INT + \beta 3INF + \beta 4EXC + \varepsilon$$

Data analysis and results

Table 3. Descriptive statistics

	MBI10	*Economic Growth*	*Interest rate*	*Inflation rate*	*Exchange rate*
Mean	4160.8622	1.6652	5.5435	3.2957	54.1588
Standard Error	256.4690	1.0528	0.1488	0.9639	0.5440
Median	4116.6600	2.0000	5.4000	1.7000	53.9300
Mode	#N/A	0.1000	5.3000	1.5000	#N/A
Standard Deviation	1229.9819	5.0493	0.7134	4.6228	2.6089
Sample Variance	1512855.5622	25.4951	0.5089	21.3704	6.8065
Kurtosis	-1.0910	7.0191	-1.1761	6.1504	0.6237
Skewness	0.0751	-1.1299	0.3142	2.5474	0.7484
Range	3902.3900	29.9000	2.2000	18.4000	10.9100
Minimum	2251.0900	-15.4000	4.6000	0.3000	50.1000
Maximum	6153.4800	14.5000	6.8000	18.7000	61.0100
Sum	95699.8300	38.3000	127.5000	75.8000	1245.6516
Count	23.0000	23.0000	23.0000	23.0000	23.0000
Confidence Level(95.0%)	531.8841	2.1835	0.3085	1.9991	1.1282

Analyzing the data for Skewness statistics, the result of the description of the variable implies that the economic development is symmetrical, therefore it is negatively skewed. The other variables MBI10, interest rates, inflation rates and exchange rate are not symmetric because they are greater than zero, they are positively skewed because the majority of the corresponding observations are higher than their average values.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.971373
R Square	0.943565
Adjusted R Square	0.931024
Standard Error	323.0335
Observations	23

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	13627.19	1744.711	7.810573	3.44E-07
EG	22.76447	13.94088	1.632929	0.119854
INT	-1586.88	119.364	-13.2944	9.54E-11
INF	22.61987	22.2059	1.018642	0.32187
EXC	-14.4383	33.32996	-0.43319	0.67002

RESIDUAL OUTPUT

Observation	*Predicted MBI10*	*Residuals*
1	2103.807	147.2825
2	2220.893	61.44666
3	2439.082	249.5785
4	2780.453	-241.593
5	2958.628	-192.518
6	3139.662	192.998
7	3437.531	92.5487
8	3625.264	-156.234
9	3736.585	-71.9246
10	3937.139	-115.529
11	4046.91	281.1803
12	4321.817	327.0727
13	4414.262	-791.032
14	4094.774	21.8855
15	4714.008	-228.828
16	4868.551	-163.701
17	5004.349	-159.299
18	5504.129	-222.989
19	5372.183	325.0673
20	5528.362	625.1182
21	5782.871	314.4687
22	5912.064	-124.834
23	5756.504	-170.164

Based on the results made with the computer program Excel, we present the linear regression model:

$$MBI10 = 13627.19 + 22.764EG - 1586.877INT + 22.619INF - 14.438EXC + 323.033$$

Discusions

If t-statistics > 0 then the independent variable is significantly important, if t-statistics < 0 then the variable is not significantly important. Consequently:
The independent variables (economic growth and inflation) are significant, while the independent variables (interest rate and exchange rate) are not significant.
The independent varaiable Economic Growth (EG) shows the positive relationship (positive effect) on the dependent variable (the value of the stock market index MBI10). The value of the regression coefficient 22,764 shows us that with an increase in the percentage of economic growth of 1 percent, the value of the MBI10 index will increase by 22,764 index points on average, if the other factors remain unchanged.
The independent variable Inflation (INF) shows the positive relationship (positive effect) of the dependent variable (the value of the stock market index MBI10). The value of the regression coefficient 22,619 shows us that with an increase in the inflation rate by 1 percent, the value of the MBI10 index will increase by 22,619 index points on average, if the other factors remain unchanged**.**
The independent variable Interest rate (INT) shows the negative relationship (negative effect) on the dependent variable (the value of the stock market index MBI10). The value of the regression coefficient -1586,877 shows us that with the increase of the interest rate by 1 percent, the value of the MBI10 index will decrease by 1586,877 index points on average, if the other factors remain unchanged.
The independent variable Exchange rate (EXC) shows the negative relationship (negative effect) of the dependent variable (the value of the stock market index MBI10). The value of the regression coefficient 14,438 shows us that with the increase of the exchange rate USD/MKD by 1 denar, on average the value of the MBI10 index will decrease by 14,438 index points, if the other factors remain unchanged.
Noting that the coefficient of determination r^2 is 0.9435, this tells us that about 95.35% of the variation of the dependent variable (MBI10 stock index) is explained by the independent variables included in the model, while only 4.65% of the variation is explained with other variables not included in a model. In the observations 1,2,3,6,7,11,12,14,19,20 and 21 the residual is positive, which means that the estimated regression line overestimates the true values of γ, while in the observations 4,5,8,9,10,13,15,16,17,18,22 and 23 the residual is negative, which means that the estimated regression line underestimates the true values of γ.

Conclusions

Given the significance of the macroeconomic indicators included in our analysis, we can conclude that economic growth, as an indicator of the movement of the economy, should be in constant growth for the capital market to function and have continuous development. We have shown that although the inflation rate has a positive impact on the capital market, the enormous increase results in a fall of the value of the domestic currency and a decrease in the standard of living for the citizens of that economy.
The impact of the exchange rate can be compared to the fact that with the increase in the value of the exchange rate USD/MKD, the value of traded shares in the capital market decreases because automatically a higher value of the foreign currency results in a decrease in the value of the domestic currency.

Although interest rates have a negative impact on the value of shares in the capital market, they should also be at a level that is acceptable to both owners of capital and users of capital in the transactions made in the capital market..

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