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Greening Corporate Responsibilities Toward a Future Sustainable Development!

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Abstract: The way society produces, consumes and uses natural resources, has become the headline of the agenda for politics, governance and contemporary society in its entirety and at all. In the face of this argument from different authoritative actors it has been reached almost uncontested that the sustainable development model offers the best solution and with less consistency in the interaction of society with the natural environment, maximizing the well-being in national, regional and global levels. This conclusion has even been commonly institutionalized, assessing that sustainability must become everyone's business if it is to overcome challenges like global warming, climate changes and their consequences, poverty reduction and overall growth of the individual countries".

How Albanian business and corporations are applying principles of sustainable development through their activity while caring nature and generating wellbeing's to the society?

The main hypothesis of this work, brings in attention the indispensable role of business and corporations toward a sustainable future, concluding that greening corporate responsibilities is the most effective instrument to achieve this objective.

Analysis, comparison, generalization and evaluation based on primary and secondary qualitative or quantitative sources has been used in this presentation. Primary empirical findings based on an interactive communication with 130 businesses of different categories and fields mainly in Tirana, will be brought as an argument to present indicators of business responsibility to society and nature in the main urban area of the country. To support this business green deal, the drafting, presentation and approval of the "Green Paper on CN&SR" coming through a wide discussion among stakeholders, is offered as a direct contribution to this paper.

Key Words: Green economy, sustainable development, corporate social l& nature responsibility

New movements and tendencies of foreign direct investments

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Abstract: The motive for writing the paper is to answer the question of how foreign direct investment has moved, how it has affected to date, despite the great turbulence with the Covid crisis. But also to indicate whether and to what extent FDI had a positive impact on overall socio-economic and financial relations in markets around the world during the Covid Crisis. This paper connects the issues of the relationship between foreign direct investment on the one hand and on the other hand, monitoring and analyzing the movements of national finances of a large group of countries, the so-called developing countries and emerging market economies. Different motives are the reason for the international tendencies, changes and effects caused by the Covid crisis.

The main research question is what tendencies and movements FDI faced in conditions of great market turbulence, uncertainty and crisis. On the other hand, an attempt is made to predict what will happen in the coming years in the post-crisis Covid period. The main focus now should be on the process of economic recovery. But the question is not just about reviving economies, but how to make a better recovery that will be more sustainable and more resilient to future shocks. For this purpose, this paper is generally divided into qualitative methodological studies that draw conclusions.

The purpose of this paper is to show the structure and dynamics of the FDI movement as they go through a process of crisis, especially in developing countries, underdeveloped countries and developed countries. The paper highlights the advantages and disadvantages of foreign models for stimulating foreign investment in times of crisis. In addition, the paper aims to highlight the causes of the turbulence, as well as to indicate possible future directions for action.

The following results are expected from the research: greater correct conception of a strategy for attracting FDI, by constant monitoring of the situation, by regulating the international movement of capital worldwide, and especially at the regional level and through constant analysis to remove the constraints for greater attraction of FDI in countries where they are needed.

Keywords—*foreign direct investment, foreign experience, international capital movement, economic development.*

Introduction

Foreign direct investment, the international movement of capital, portfolio investments and financial derivatives that bring together all major stock exchanges in the world, as well as other investments that provide access to foreign credit markets, in today's crisis, have largely determined the future of the international economy. At the same time, it was not so much the movement of capital that determined the condition and perspective, on the contrary, its dynamics influenced the flow of capital. On the other hand, many emerging economies today have made important decisions about accessing and managing capital flows. They did this in order to ease the requirements for capital inflows.

This type of asymmetric interdependence is explored in this paper, along with other aspects of international capital flows.

Therefore, this paper, in many ways, warns of the danger of the fact that in this crisis and turbulent period, the world economic situation is in great search for a new balance. Such scale and development was given to foreign direct investments for easier location of the desired countries. This enabled a larger volume and speed of transfer of goods and capital from one place to another, with the aim of encouraging balanced economic growth in the high-risk countries affected by the crisis.

The subject of the paper is the presentation of the new movements and tendencies of the countries that quickly created a favorable business climate for FDI in the crisis period. In this regard, they sought national and international regulation with a new role in the global and regional institutions responsible for the flow of capital. One of the basic criteria for successful economic transformation in the underdeveloped economies of the post-crisis period was the share and size of FDI for each country separately.

Therefore, the purpose of this paper is to cover the new movements in the process of the new stages of the development of foreign direct investment in conditions of pandemic crisis. But this goal is far more complex and as such should be subject to a good financial market system in an extremely complex and risky environment.

Therefore, this paper explores the role and importance of foreign direct investment in national economies that have primarily become more visible at key macroeconomic moments in times of crisis. For countries, FDI today is one of the most favorable forms of engaging foreign private equity. But also because they act to save on financing economic development.

Also, this paper aims to explore several important goals of the significant factors that influence the attraction of FDI. Thus, according to the conducted empirical studies in the labor, it is indicated that the size of the market and the growth potentials are significantly indicated by the inflow of FDI. In this regard, the following factors that influence the attraction of FDI can be singled out: market size and potential, institutional and regulatory quality, trade openness, infrastructural quality, economic and political stability, quality and labor costs, etc.

This is the basic hypothesis of labor, that foreign direct investment, the global financial system and financial

markets today, face new challenges and risks. The reason for this is the complex situation in international economic and financial relations caused by the Covid crisis. In the globalized era, those relations continue to aspire to improve the situation in the international financial markets and as such deserve special analysis, monitoring and control.

As a problem, it can be pointed out that if countries do not have a properly conceived macroeconomic policy to attract FDI, it can come from increased trade tensions and reduced competitiveness between companies. Furthermore, developing countries and emerging market economies are forced to provide special benefits to foreign investors, taking into account the cost that the state makes lower than the return on foreign investment.

The ultimate goal is to gain knowledge to overcome the crisis period as a whole, with resolved numerous problems and risks faced by foreign investors to date. As well as gaining knowledge about financial stabilization, dealing with the economic consequences of the Covid crisis which is towards increasing disposable income and consumption of the population. Emerging economies also need to close the gaps with advanced economies to reap the benefits and experiences of international trade and the mobility of labor and capital markets, as well as the latest technological advances available worldwide.

Literature Review

As a fundamental problem, it is posed that the turmoil in the FDI will stabilize and overcome the problems they faced especially during the Covid crisis period, in order to create greater benefit to states and reduce poverty. However, gaining knowledge to overcome the crisis period as a whole will be of great importance for solving a number of problems and risks faced by foreign investors to date. Also, gaining knowledge about financial stabilization, dealing with the economic consequences of the Covid crisis which is towards increasing disposable income and consumption of the population. As a problem, it can be pointed out that if countries do not have a properly designed macroeconomic policy to attract FDI, it can come from increased trade tensions and reduced competitiveness between companies. Furthermore, developing countries and emerging market economies are forced to provide special benefits to foreign investors, taking into account the cost that the state makes lower than the return on foreign investment.

Purpose of Study

The purpose of this paper is to show the structure and dynamics of the FDI movement as they go through a process of crisis, especially in developing countries, underdeveloped countries and developed countries. The paper highlights the advantages and disadvantages of foreign models for stimulating foreign investment in times of crisis. In addition, the paper aims to highlight the causes of the turbulence, as well as to indicate possible future directions for action. Therefore, the purpose of this paper is to cover the new movements in the process of the new stages of the development of foreign direct investment in conditions of pandemic crisis. But this goal is far more complex and as such should be subject to a good financial market system in an extremely complex and risky environment.

Therefore, this paper explores the role and importance of foreign direct investment in national economies that have primarily become more visible at key macroeconomic moments in times of crisis. For countries, FDI today is one of the most favorable forms of engaging foreign private equity. But also because they act to save on financing economic development.

Research Methods

For this purpose, this paper is generally divided into qualitative methodological studies that draw conclusions. This is the basic hypothesis of labor, that foreign direct investment, the global financial system and financial markets today, face new challenges and risks. The reason for this is the complex situation in international economic and financial relations caused by the Covid crisis. In the globalized era, those relations continue to aspire to improve the situation in the international financial markets and as such deserve special analysis, monitoring and control.

Findings and Results

The findings from the realized work provide sufficient information for the sources that more foreign direct investments to influence the new economies in order to close the gaps with the advanced economies and to gain the benefits and experiences offered by international trade and labor mobility and capital market, as well as the latest technological advances available worldwide.

Conclusions and Recommendations

FDI has proven to be a very important factor in accelerating economic growth in developing countries. Because developing countries have filled this gap with FDI, as an important form of international capital flow. Thus, according to empirical studies conducted in the paper, it is indicated that the market size and growth potentials are significantly indicated by the FDI inflow.

For example, large FDI inflows in Central and Eastern European countries over the last 3 years have contributed to a larger restructuring of economies, which has encouraged their economic activity.

This paper aims to provide guidance to underdeveloped countries to better position themselves and take advantage of the opportunities and benefits offered by FDI, thereby normalizing ongoing crisis turbulence. The international community should also make more efforts to attract more private investment in low-income countries so that they can be integrated more fully into the global economy. Therefore, the economic policy of each state should be

aimed at avoiding crises and serious recessions and developing appropriate methods with incentive and security networks. The purpose of this article was to analyze the differences in the inflow and outflow of foreign direct investment between countries with a particular focus on the movements and impacts of their economic growth during and after the crisis. Namely, the countries that have benefited from FDI benefits have become an example of economic development and an indicator of external economic confidence in the stability and development of their economies. What has been said so far in this paper identifies the need for writing what is expected in the future of FDI to move in the direction that states will go to overcome and resolve many of the problems they faced during the crisis and in the post-crisis period. Period in order to be better investor oriented. Therefore, it can be concluded that by taking measures to strengthen the investment position of the countries and by improving the general business climate, direct incentives can be expected from foreign investors.

But, as the most significant conclusions from the latest empirical research cited in the paper, they found that foreign direct investment has been a key generator of countries' economic growth in the last decade. If countries follow the cycle of highly developed economies, in the future they can expect the increasing importance of reinvested earnings, as a source of capital for the current and investment needs of companies in their countries. Covid crisis process, caused a lot of change in the attitude towards the capital markets, ie: FDI, stock exchanges, portfolio investments and their role in the development of countries. FDI has proven to be a very important factor in boosting economic growth in developing countries. However, FDI flows are expected to remain weak due to uncertainty about the evolution of the pandemic. The important thing for them is that, before the crisis, they were stable and navigable without any special trading challenges. It is therefore particularly important to conclude that in just less than 10 years since the last major financial crisis, capital markets have once again faced a crisis and major turbulence and uncertainties. The aim of the paper is to point out that large investors should perceive the huge technological and economic potential of the regions in the newly developed and poorly developed economies and thus expect large returns in the near future. Therefore, it can be pointed out that the world trade imbalances that marked the world before the crisis will not clear up on their own. But, as the most significant conclusions from the latest empirical research mentioned during the paper, they found that FDI is a key generator of economic growth in countries in the last decade. If countries follow the cycle of highly developed economies, they can expect increasing importance of reinvested profits in the future, as a source of capital for the current and investment needs of companies in their countries.

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Quality Indicators in Working Environment in the case of Defense and Security Trade Union

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Abstract: The main objective in this paper is to analyze several quality indicators for the working environment in the Defense and Security Trade Union (SOB), and examines serious problems that contradict the concept of sustainability and human capital conservation. The research aims to present the real situation for the workplace's quality, but also to obtain data on the level of awareness and education on OSH among SOB members, which does not meet international standards for a NATO member such as the Republic of North Macedonia.

Due to collecting the necessary data, educational trainings for the members of SOB, and trainings for the future trainers for presidents in SOB were realized during 2020/2021. For the same purpose, an anonymous survey was conducted and ten quality indicators were developed. Although the quality indicator for accidents at work was only 13 (on a scale of up to 100), the value of 53 belonged to the indicator for the importance of level of protection at work from physical injury. A total value of 69 was registered for the personal protective equipment (PPE) indicator, which is one of the biggest problems in terms of requiring adequate safety working conditions.

During trainings and operations, most of the of military personnel include intense combat training and extremely dangerous situations, so the stress they are exposed to is a much bigger problem than physical exertion.

Keywords: quality indicator, occupational safety and health, personal protective equipment, risk, hazard

Introduction

In the contemporary circumstances, sustainable development concepts pose more Occupational Safety and Health (OSH) issues, and despite strictly defined environment and green technology issues, the costs of safety and health hazards and diseases have to be seriously considered.

Military activities are often considered more dangerous than civilian work, especially in crisis situations, but on the other hand, peacetime have seldom been analyzed in this respect. Incidents such as dangerous accidents, exposures, and near misses, indicate serious safety and health risks faced by military personnel. If not adequately addressed, these risks, even if they do not cause immediate harm, may cause greater damage in the near future.

Purpose of Study

The most important purpose in this study was to emphasize the main benefit from the research that the members of SOB raised their level of education and awareness for the importance of their own safety, and the safety of colleagues at work. They also started to think about the value of human life, and to give suggestions for their own vision for solving of the existing problems, and professional development and continuous upgrading in the field of OSH.

Research Methods

The environmental quality indicators were created on the basis of the conducted survey which, due to its anonymity, objectively and successfully reflected the real problems faced by the members of SOB.

Findings and Results

Most members of the SOB face the main problem of using old, dilapidated and non-functional personal protective equipment, defective vehicles, poor sanitation and hygiene that are below any level, as well as mobbing at work by their superiors, which further increases the already high level of stress in their work.

Conclusions and Recommendations

Developing a strong culture of safety and health in our country should be achieved by having engaged leadership working with a committed workforce toward the goal of zero injuries, illness and incidents. Many of the respondents think that the safety of the employee is not enough and they feel unsafe in their workplace pointing out serious problems that undermine the basic concept of sustainable development and occupational protection of the employee in

order to preserve human capital. On the other hand, the membership of the Republic of North Macedonia as the 30th NATO member in 2020, clearly traces the direction of supporting and developing new policies that must be in accordance with the highest standards of security in the operation of each army.

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Strategy for Resolving Conflicts in Family Businesses

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Abstract:

The transition process in the Republic of Macedonia caused a number of changes, acknowledging that the new market economy system inspired and intensified the process of establishing a family business (FB). Regardless of the fact that FB are one of the oldest forms of business, they have a very low survival rate. It has been proven that only 13% of FBs are inherited in the third generation. (Ward: 1987) Indeed, family and business are so intertwined in BF that the potential for disagreement is greater than in firms with other forms. (Lee & Rogoff, 1996). As a family firm grows in age and number of employees and family owners, as well as in wealth, conflict increases due to differences in goals and strategy. Usually, interpersonal conflict is caused by rivalry between family members (Keanon Alderson, 2015; 140). This process will necessarily take place in the business transition phase.

Due to empirical research, dependent variables have been identified: output for business and output for family. Successful BF will be considered those businesses that have good output for the business and good output for the family.

The purpose of this paper is to detect which are the strategies that should be used to give good results for the business but also for the family, and what is the correlation between the strategy used for resolving conflict with the output results for the business and the family. A survey was conducted at 104 BF in Northern Macedonia to verify the hypotheses.

From the results of the field research, it was confirmed that cooperation and compromise as a conflict management strategy in terms of BF are directly correlated with business success, while the strategy of competition and avoidance give an opposite effect.

Good communication also has a positive correlation with FB success.

For a successful management of BF, the good communication between the stakeholders should be applied and the strategy of cooperation and compromise for conflict resolution should be used.

Keywords: *communication, conflict, family business, conflict resolution strategies*

Introduction

FB even though it is among the oldest forms and quite widespread still does not have the definition all accepted for it. In our study we will define FB as an enterprise / company in which the core capital is owned and / or managed by two or more family members and has a clear tendency to be passed to next generations. (Ademi Bedri; 2005; 23).

On the other side conflicts in most cases occur when situations are unclear, unpredictable and when there is not enough mutual understanding between the two parties and when the parties have opposite positions on it. Conflict is inevitable on FB, but the right question is: Will we manage the conflict or will he manage with us?

Purpose of Study

The main purpose of this paper is to find out what strategies should be used to successfully manage a BF. The most specific goal is what is the correlation between different strategies and the output results of the business and family.

Research Methods

The research will be done by first defining BF to determine more easily who can be a sample for research while the research is done in RMV. For this purpose, a research instrument has been designed which measures the output results for the business and the family as well as the five known strategies for conflict management. Based on this, the following hypotheses have been identified: Hypothesis 1: Using the strategy of cooperation and compromise will result in positive results for the business and the family. Hypothesis 2: Using competition and avoidance strategy in resolving family business conflicts results in negative business and family outcomes. Hypothesis: Good communication on FB positive correlation with business and family results.

Findings and Results

From the results obtained it is clear that the strategy of cooperation and compromise have a positive correlation with the results of business and family, while the other two strategies have the opposite effect. The same conclusion applies to communication in BF, there is a positive correlation with business success, although there is a perception that BF have good communication

Conclusions and Recommendations

From the results obtained it is clear that the strategy of cooperation and compromise have a positive correlation with

the results of business and family, while the other two strategies have the opposite effect. The same conclusion applies to communication in BF, there is a positive correlation with business success, although there is a perception that BF have good communication.

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Shape optimization with composite sketching in a redesign process

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Abstract: Design Engineers need to create high quality and innovative products in order to succeed in the continually increasing global competitive market. Sketching is an important part of the design process that helps designers during creative phase of the process and helps them develop inventions in a cost effective, fast and flexible way. In this study, sketching and CAE tools (Shape optimization) are used to redesign an old component of a telescopic hydraulic cylinder with an objective of reducing its mass while maintaining its performance and functionality. The results show that the final product that is derived by using the above mentioned methods has been reduced by 30.77% of the original weight while ensuring normal operation under the given constraints.

Keywords: Redesign, form generation, sketching, creativity, shape optimization

Introduction

Engineering design is quite complex process when it comes to creation of new industrial products. During this process sketching is a useful tool which helps engineer designers to develop their new products. Sketching includes all forms of graphical representations in the early stages of the design process, including hand-drawing and digitalized drawings. As important as they are, sketches help designers during the early stages of design process and pave the way the development of inventions.

Being the first language of design, sketching is considered as one of the most powerful tools that an engineer designer can possess. Moreover, sketching is the quickest and most efficient tool for problem definition, ideation and the development of form and function. Considering the fact that in the digital era that we live, the influence of CAD and CAE in general in the product design is quite large, sketching is still an essential tool for the product and engineer designers, being free from the logical processes of the digital programs.

Researchers conclude that engineers that lack sketching ability, struggle to find consequences that stimulate the design exploratory process (Kapoor et. al., 2011) The ability to generate abstract concepts without concentrating too much on the mechanics of drawing afford the designer a higher level of abstraction and reflection, facilitating creativity and innovation.

Purpose of the study

In this study, sketching is used in the early stages of the redesigning process of a small component of a hydraulic cylinder called as the “base eye” of the cylinder. In this process, both sketching and CAE tools are used in an attempt to develop a new design of the component, making it more resilient and cost-effective than the previous one. The aim of the study is to reduce the weight of the component by at least 30% of the original weight while maintaining the performance and avoiding distortion.

Research Methods

Firstly, the old model of the base eye is generated in CAD after which the product optimization is done by applying the material selection and its performance properties. From the design system Autodesk Inventor, the required percentage of weight reduction is set in the parameters of “shape generator” which will enable us to get the optimal form of the base eye. Based on the recommendations of the shape generator, sketching is used in order to obtain the final design of the product.

Findings and Results

Kevin Henry, uses the term morphology in his book, with the intention to describe the generation of form through sketching as well as computer modeling as according to him that is the “clearest analogy of how designers often add, subtract, or otherwise “morph” form through manipulation” (Henry, 2012). He adds that, shape morphologies help designers in the process of creating and generating new forms by combining and subtracting

components (Henry, 2011). We can mention three processes of form creation: the additive process, subtractive process and composite process.

In the additive process we add forms to the existing structures with different purposes such as expanding or changing their function and appearance. The subtractive process, modifies the object by removing material to obtain a more defined form, to change or simplify its function or just for aesthetical purposes. Finally, the composite process which is a combination of both adding and subtracting until we reach the desired form. This process is used to derive our final product which is shown step by step in the following sketches. It starts with the basic form of the base eye which is the cylinder, then based on the topology optimization recommendation for material reduction (fig. 1), some parts are added and others are subtracted as shown in the sketches below (fig 2).

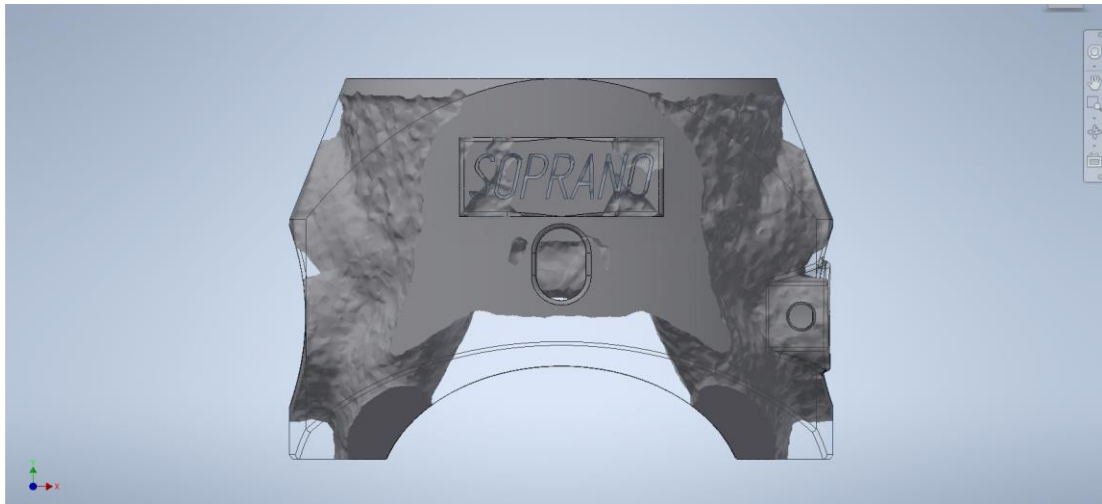


Figure 1. Results from Shape optimization

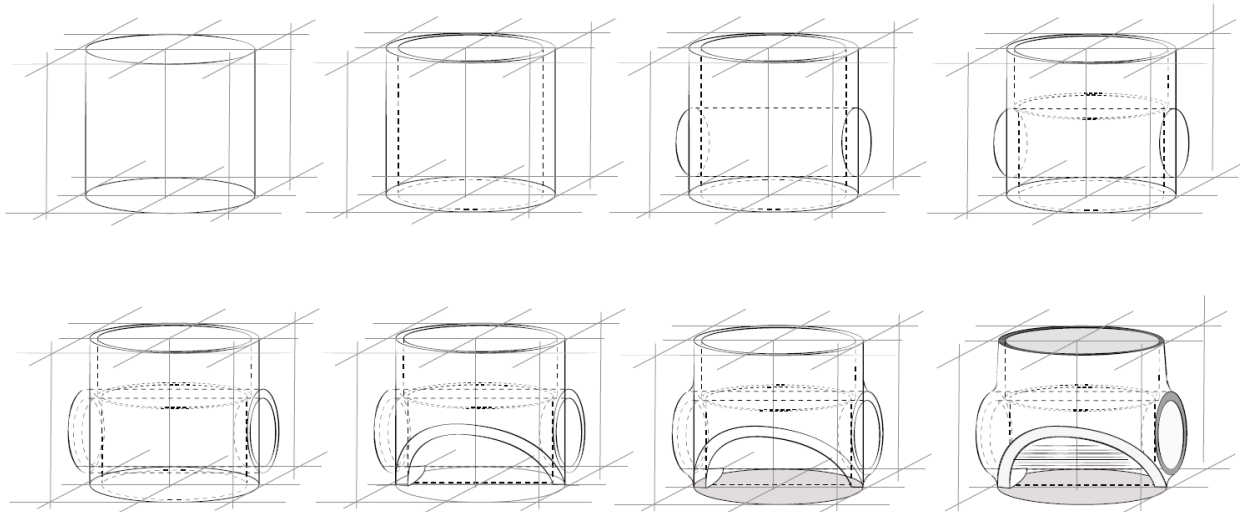


Figure 2. Composite sketching for the base eye form generation

Conclusions and Recommendations

Considering the lengthy and expensive process of designing optimal engineer products, finding quicker and feasible solutions is a primary task for the engineer designers in the global competitive market. The use of topology optimization in our design, enabled us to get an optimal form and lighter product reduced by 30.77% from the original weight, by skipping the hard prototyping process. In the same way, sketching had a positive effect on the final design quality by fastening the idea and concept development into a successful product. Given this results, we can conclude that sketching is an important process in the early creative phases of engineering design and as such they should be ongoing research topics within the design community.

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The relationship before capital structure of the companies participating in the Macedonia Stock Exchange and Covid-19 pandemic

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Abstract

The purpose of this study is to analyze the capital structure of the companies participating in the Macedonia Stock Exchange, before and during the Covid-19 pandemic in order to determine if the pandemic was a determinant of capital structure during this period.

Sustainable development of the companies, a stable financial and economic performance of its activities largely depends of its capital structure. Companies finance their activities through debts and equity. In order to analyze if there are changes in the way of financing respectively if the leverage of this companies has changed during the period of time taken into consideration this study will provide empirical evidence on the impact of the Covid-19 pandemic by using financial data obtained from the financial reports of the companies participating of the Macedonian Stock Exchange.

Keywords: capital structure, Covid-19, leverage, equity.

Psychometric Assessment of the Depression Anxiety Stress Scales-21 (DASS-21) in subjects whose first language is not English

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ABSTRACT

Introduction: The psychometric properties of the original English Depression Anxiety Stress Scales -21 (DASS-21) were evaluated in non – native English speaking university students in Brunei Darussalam who were studying in English.

Methods: This study comprised three phases. In phase 1, the comprehensibility and temporal stability of the original DASS-21 were tested in a convenience sample of 15 participants. English and Malay synonyms were added in parentheses to those original words/ phrases that were unfamiliar to the participants. In phase 2, the internal consistency reliability, including the temporal stability of the adopted DASS-21 were tested in 39 participants. In phase 3, 204 university students completed the adapted DASS-21 along with other measures (Perceived Stress Scale 10 (PSS10) and Revised Life Orientation Test (LOT-R)).

Results: The Principal Component Analyses (PCA) showed that the DASS-21 scales demonstrated good construct and convergent/discriminant validity, adequate internal consistency (ranges of alphas = 0.70 - 0.78) as well as good one week temporal stability (range of r_s = 0.637–0.675). The stress items split between the depression and anxiety construct.

Conclusions: The adopted DASS-21 scales are valid and reliable instruments. Scores of each scale appear to detect depression anxiety and stress among students. DASS-21 stress scale should be used with caution when used for outcome assessment. We recommend cross-cultural adaptation of a measure before their use in a different culture and country.

Keyword: DASS-21, Comprehensibility, Validity, Reliability, Brunei, Asia

Verbs of visual and auditory perception as pragmatic markers in spoken Macedonian

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Abstract: This paper looks at interpersonal functions of visual and auditory perception imperatives in authentic telephone conversations in Macedonian language. Although they belong to the inventory of pragmatic markers that have received due attention in English scholarship, its equivalents *vidi/slusaj* have remained largely understudied in the context of spoken interaction. Therefore, the existing research on *look/listen* may serve as a basic framework for contrastive analyses of interpersonal functions of its functional counterparts in other languages. The sample analysis performed through AntConc is discussed within the scope of the Speech Act Theory and it confirms that the imperatives for visual and auditory perception play a major part in the realization of the illocutionary force of the speech act itself.

The main hypothesis underlying our investigation is that the analyzed markers appear in initial syntactic positions in Face-Threatening Acts (FTA) with the core function: to signal the aim of the illocutionary force of the speech act within which they appear. To prove the hypothesis we conduct an analysis using data collected from authentic telephone conversations in Macedonian whereby determining speech acts threatening the negative and positive face of the hearer (addressee). By discovering interpersonal functions of these widely-used pragmatic markers in Macedonian we can enrich our understanding in conversational pragmatics and observe closely how new developments in communication are inciting changes in the way we interact.

Keywords—*conversation, pragmatic marker, pragmatics, speech acts, imperative of visual perception, imperative of auditory perception*

Introduction

Conversations are interpersonal in nature and interpersonal pragmatic markers are those elements that appear in speech acts that threaten the hearer's face to 'smooth out' or to 'boost' the illocutionary force behind that speech act. These linguistic elements have not been studied in spoken Macedonian, which is why we decided to make them a subject of our analysis. More precisely, our study takes a deeper look in markers *vidi/slusaj*, the pragmatic use of which has not gone unnoticed in traditional grammars and dictionaries of the Macedonian language. However, this use has not been studied in the context of the Speech Act Theory.

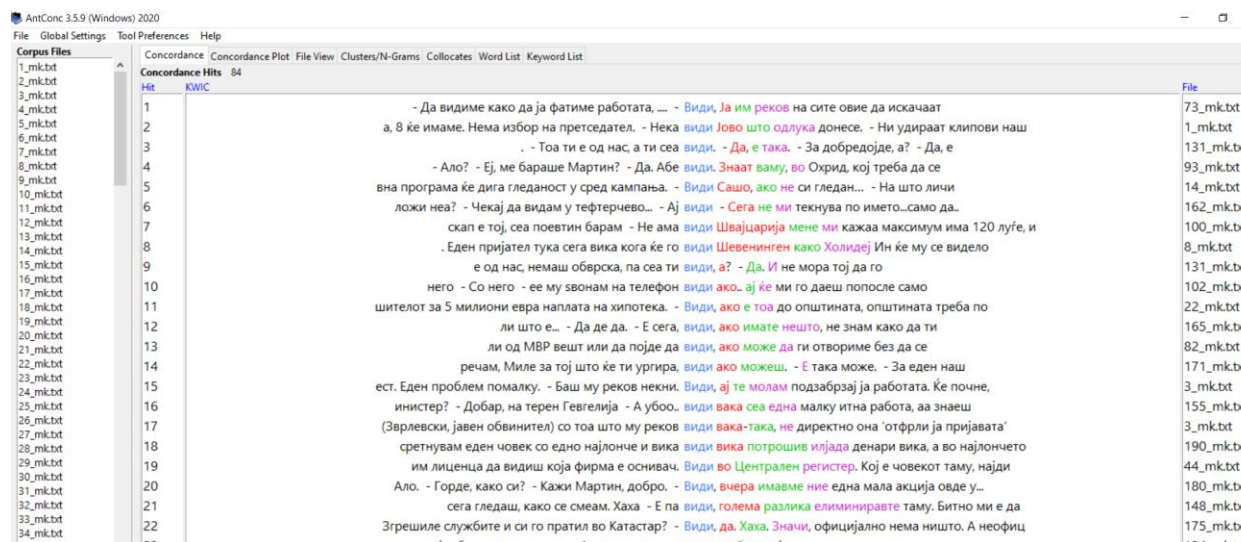
Purpose of Study

Our study aims to give a more concise picture of the role of imperative visual and auditory perception verbs as pragmatic markers in FTAs in spoken conversations. Providing a closer look at interpersonal functions of a specific linguistic element, the study's purpose is to contribute to the field of pragmatics and discourse analysis, but also to the field of intercultural communication.

Research Methods

This study is a corpus-driven empirical analysis of authentic telephone conversations in Macedonian language. The sample is analyzed through a corpus-analysis software (AntConc). The sample contains 44 298 tokens with 0.139 type-to-token ratio and further analysis is performed through Excel.

Figure 1. Example of AntConc search for discourse marker *vidi*



Findings and Results

The analyses showed that the imperatives for visual and auditory perception as pragmatic markers occur in 74 FTA. The analysis of the syntactic position shows a positive correlation between the function of boosting the illocutionary force of a FTA and the initial position in an utterance. If we have to put this in more simple terms, this would mean that the studied pragmatic markers predominantly pre-face speech acts such as orders and suggestions.

Table 1. Frequency of occurrence of the pragmatic markers in FTA

Warning	Order	Suggest ion	Confess ing	Critisiz ing	Disagree ing	Remind ing	Agreeing	Offeri ng	Taking blame or responsibi lity	Total
4.05%	31.08 %	40.54%	4.05%	1.35%	10.81%	2.70%	1.35%	1.35%	2.70%	100.0 0%

Conclusions and Recommendations

This paper proves the interpersonal functions of the auditory and visual perceptive verbs in imperative occurring as pragmatic markers in every-day, authentic telephone conversations in Macedonian language, through quantitative and qualitative data analysis within the scope of Speech Act Theory. In order to broaden this research further, we would suggest adding social variables such as speakers' age or gender into the analysis. This will enable an interface between the fields of pragmatics and sociolinguistics.

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Models of the Kindergarten Functional Organisation, the Possibilities of Adapting it to the ‘New Normal’

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Abstract

Preschool and school education is an essential part of every society. However, the built environment, educational buildings, their architecture and functional organisation have been facing challenges for the last two years with the spread of COVID-19 and the ‘new normal’.

Kindergartens strive to provide a safe and healthy environment for children. Instructions and recommendations have been provided by different experts and organisations worldwide in terms of how to adjust the functioning of kindergartens during the uncontrolled spread of the virus. The measures include organisational and hygiene measures. Organisational measures are closely related to the architectural design of buildings. At this point, the main question of this research was raised, i.e. how to adjust the functional organisation of kindergarten buildings to adapt them to the ‘new normal’.

The research examined the architectural characteristics of kindergartens in Slovenia together with the basic architectural typology. It presents models of the kindergarten functional organisation and the possibilities of adapting it to the ‘new normal’. The process of adapting existing buildings has faced challenges to provide space for each group of children with as few contacts with other groups as possible.

In this research, kindergarten buildings are classified based on the criteria with direct or indirect impact on the building functional organisation: the size, purpose and form of the building, and the year of construction. Consequentially, these criteria impact the possibility of a building to adapt. The size of the building is determined based on the number of classrooms. Larger buildings have more classroom groups and are demanding in terms of providing divided spaces for groups of children. The year of construction defines the ground floor plane of the building. In older buildings, classrooms share cloakrooms and sanitary facilities, while in newer buildings, these spaces are separate and groups of children are easier to divide. The purpose of the building defines whether the building was built with the purpose of preschool education or with any other purpose and has been adapted. The form of the building defines the compactness of the building, directly impacting the possibility of adapting the building functional organisation.

In the conclusion of the research paper, models of the kindergarten functional organisation and the possibilities of adapting it to the ‘new normal’ are presented.

Keywords: kindergartens; models; kindergarten functional organisation; COVID-19; ‘new norm’

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Review of noise screen application on highways in Albania

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ABSTRACT

Pollution from noise is one of the most important environmental problems in the world that affects human and animal life disturbing physical and psychological health. Parallel to the increase in population and developing highway and railway infrastructure in cities road transport became one of main sources of noise. Noise related pollution phenomenon is very widespread in areas that are close to the main roads, high-intensity roads, such as highways, where the speed limit is higher. Many improvements are currently being made to road and traffic management in Tirana to cope with the recent increase in traffic. However, these actions both have negative and positive environmental impacts. In this study, the capital city of Albania, Tirana has been selected to study the noise level of road traffic. This study highlights the noise level of road traffic measured at different locations of the city along the roads during peak hours. Noise rates in Tirana exceeds the rates, defined by European Union (EU). Comparison are made of the standards of noise in Russian Federation and European Union, and their application in Albania. Noise protection measures are an integral part of the project in the feasibility study stage. The article also deals with the issue of measuring the effectiveness of noise barriers, the impact of traffic noise on human health, the analysis of theoretical calculations and experimental data. Based on theoretical calculations and experimental data, we propose methods to improve the noise control properties of noise barriers. The analysis of the acoustic efficiency of noise screens placed on the construction of residential areas is carried out. Recommendations for the design and placement of a noise screen on the construction of residential areas have been developed.

Keywords: noise, noise calculation, noise screen barriers, highway, equivalent noise reduction

Introduction

An important factor in the quality of life in urban centres is the level of noise to which the population is exposed. Several factors affect noise pollution in the city. A major challenge is to quantify the noise impact on the population. The growth of economic and social development and population reinforces the trend of increasing noise. Considering the connectivity of the surrounding area, transportation routes could lead to an increase in noise pollution. Noise is considered a growing health threat and if left unchecked could lead to hazardous conditions. Noise barriers are artificial barriers installed on the path of noise propagation from the traffic road to the property protected from noise. Typical noise barriers are noise barriers consisting of the following main components: the foundation (if provided for in the design documents), the supporting structure (especially supporting posts) and the panels. They are designed to protect the population from harmful noise effects emanating from highways and railroads, construction sites, industrial facilities, and other noise sources. When designing a noise barrier, it should be taken into account the specifics of the terrain, slopes in the roadway, steep slopes and driveways, and sharp turns. The material, location, size and shape of noise test structures can affect acoustic performance. The aim of this work is to develop the scientific and methodological basis for the acoustic calculation, taking into account the planning and design solutions and the spatial characteristics of the buildings protected from traffic noise in Albania.

Purpose of study

Noise barriers along highways are designed to mitigate the effects of traffic noise along the highway. Noise barriers primarily block the direct path of sound between the source on the highway and the receiver exposed to the sound. Noise mitigation capability, aesthetics, cost and constructability, and structural capacity to withstand wind and seismic loads are critical parameters to consider in noise barrier design. The height and length of a noise barrier is determined by acoustic considerations, aesthetics, and cost. Therefore, a noise barrier is primarily designed to meet acoustical requirements. However, the final design is generally also determined by the non-acoustic factors.

Research Methods

Study Area

The study covered the main urban road network to measure traffic noise levels at nine different locations along the road. The study area and locations of data collection are presented. The traffic noise data were collected during daytime at 15 locations of the city using a digital sound level meter Testo 816-1, measurement range 94 dB dhe 114 dB.

Time period

Two time periods for road traffic noise were selected for peak daytime hours; at day period (from 7:00 to 23:00), at night period (from 23:00 to 7:00).

Findings and Results

The analysis of the theoretical efficiency of the noise screens of different heights confirmed that the efficiency increases with increasing height of the noise screens. In accordance with ODM 218.2.013-2011, the efficiency of the noise screens increases with increasing height. Minimum noise barrier needed for protection is ranged from 4.00 to 5.00 m. Comparison of the noise level according to the Russian standard is slightly higher than according to the European standard used in Albania.

Conclusions and Recommendations

The problem of the noise impact of road transport, although it is sufficiently studied, but requires updating, in accordance with the existing realities. The study was conducted to measure the intensity of noise pollution caused by traffic in the city of Tirana. It was concluded that noise pollution from traffic is very high due to lack of sustainable planning. The environmental quality has deteriorated because commercial areas have been developed along the roads. There is a need for sustainable land use planning that will provide a better built environment in the city. It was also observed that the traffic noise level measured at nine different locations has the highest values. Noise screens do not only provide effective noise absorption, but they are aesthetic decorations of the road or other areas on which they are installed, and they have a high indicator of socio-economic efficiency.

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Multifunctional public spaces as a solution for revitalization of city fragments

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Abstract:

The concept of multifunctional public space can be seen as sustainable, since it covers wide variety of functions and provides space for different needs and activities of the citizens in one place, instead of occupying a wider area. To realize this potential, we must develop the concept of revitalization of the existing public spaces even more in terms of sustainability, before we start building on new and green locations.

The object of this interdisciplinary research is finding appropriate solutions regarding revitalization of the neglected public spaces that are part of public buildings. On the territory of city of Skopje, many public buildings are surrounded by gray, polluted and neglected public spaces that have no particular function, nor aesthetic or ecological significance. The Covid-19 pandemic made the people to be more aware of the significance that open public spaces offer to their citizens in terms of their physical and mental health.

The proposal for new multifunctional public space that is part of the Transport station in Skopje is designed to be context-sensitive and sustainably treated space. It is intended this project to be a new meeting point, with a strong modern attitude in its forms that respects the historical, social, natural and cultural context in which it is placed. Having in mind that this location is situated in dense urban matrix in the center of the city of Skopje, the sustainable strategies recognized in this research were found as applicable solutions in the presented project. These strategies and measures can also be applied in wider urban context on cities with similar social and environmental problems.

The sustainable urban revitalization should be understood as multidisciplinary approach: analyzing all the possible aspects important for certain location in order to achieve quality solutions that will serve well for present and future generations enabling them to live in healthy, ecological, sustainable and socially vibrant environments.

Key words: Multifunctional public space, Sustainable urban revitalization, Public buildings, Open public space, Physical and Mental health.

Introduction

In today's modern societies, a great need exists for careful, thoughtful evaluation and planning of man-made and natural resources, in terms of both current and future usage [1]. Reviewing the scientific literature as well as the existing frameworks related with sustainable urban principles, The Copenhagen Agenda for Sustainable Cities [1] was found as very useful for this research. The main argument in this agenda is that for making cities sustainable we need a radical change of mindset, new strategies and new governance models to support development and foster a new generation of urban leadership [1]. Another important framework of urban principles is given in the publication Cities for People in Practice (2015) by Chris Busch and CC Huang [2]. The eight principles of this framework are essential ingredients to sustainable, economically vibrant cities that deliver quality of life for their residents.

The theoretical point of view of the famous architect Jan Gehl was essential stand point of this research [3]. According to Gehl, external activities are influenced by many conditions. The physical environment is one of the factors that influence activities in many different ways. Social activities are the most important activities that involve people in public spaces. The nature of social activities depends on the context in which they occur. Although physical morphology has no direct impact on the quality, content and intensity of social connections, architects and planners have an impact on creating a quality public space that encourages social activities [3].

This research explains the analytical and design methods applied on a specific location in the dense urban matrix of the city of Skopje. The analyzed location currently is an unappealing, dehumanized asphalt parking in the center of the city below of the railway station. Reviewing the scientific literature on low-carbon cities, green cities, healthy cities [2], [3], [4] as well as conducting this research, helped us to come to the conclusion that this location should be designed as: multifunctional, compact, walkable, healthy, barrier-free and socially vibrant space that will deliver a high quality life to the people gravitating in this area.

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Purpose of Study

The climate in Skopje (dry hot summers and wet cold winters), demands the open public spaces to be bioclimatically designed in order to protect the visitors from high exposure on sun, rain and snow so that the visitors can have a pleasant stay. Another big problem for the people that work, study, shop, dine or sight see in this city fragment is the absence of open public spaces for resting and enjoying the city free of charge [5]. The problem with the social cohesion in this area is also evident. The conducted questionnaire showed that the residents, as well as the people working in the surrounding buildings do not have open public space where to enjoy the nature and gather. The children do not have enough open space for playing. The old people do not have open parks for walking and gathering. The young people living in the surrounding houses and buildings wrote in the questionnaire that they are lacking of an open space where they can perform music, theatrical performances and different kind of student's competitions, exhibitions and gatherings....

The analyzed location is in the center of the city and has a very complex socio-political and architectural position. In the immediate vicinity of the river Vardar it is embedded between two opposite architectural concepts. From one side of the location is the neighborhood Madzir Maalo (dating from the beginning of the XX century) - a symbol of the city's spontaneity, tradition, presenting different stages of the historical development of Skopje. The location is nested inside the Transport Station, a symbol of the Modern in Skopje. From the other side of the location is the settlement Aerodrom relatively new settlement with new buildings dating from 1980 till present day.

The density in the center of the city grows every day by adding new building on every location that was empty and green [6]. This trend especially escalated when the project Skopje 2014 emerged [6]. Due to the Skopje's high population density and pollution, the opportunity to plan prosperous, livable, low-carbon city is urgent [5], [6]. That is why the concept of multifunctional public space can be seen as sustainable, since it covers wide variety of functions and provides space for different needs and activities of the citizens in one place, instead of occupying a wider area.

The chosen location placed between the vernacular concept and the mechanical modern concept, must offer a solution that will be a harmonious fusion of all the aspects considered (historical, social, cultural, economic, ecological, ect.). The new solution must correspond with the historical and cultural heritage in this area and in the same time has to offer a solution to the existing problems this city is facing, as a post-socialist city; city in transition. This city must increase the percentage of multifunctional public surfaces, in order to meet the needs of its citizens. Without developing and applying urban strategies oriented towards sustainable and bioclimatic planning, this crowded and polluted asphalt city will not reach its full potential.

Research Methods

One of the methods used in this research is mapping of open public spaces in front of public buildings in the selected city fragment. This method enabled the researchers to identify and choose the public space that is in the worst condition in the selected city fragment. That was achieved by conducting interviews with the local citizens and people that gravitate in this area, as well as making observation of the public spaces during prolonged period (6 months). These two methods helped in discovering the capacity as well as the potential usage of the selected public space. Another important research method that helped in enlightening the present situation was conducting urban and architectural analysis of the built environment inside the chosen city fragment. Conducting historical and social analysis that lighten the context in which this public space is situated, followed. Analysis of the functions and frequency of the people was very important step of the conducted methodological procedure. This analysis helped in discovering the percent of usage of this public space. Conducting comparative analysis of the possible usage and the possibilities that this space offers with the actual usage of the space was one of the biggest results of the conducted analysis. Conducting bioclimatic analysis helped in defining the solar radiation during all year around, measuring the air temperature on location during day and night in summer period, defining the air circulation (rose of dominant winds) on the location and presence / absence of greenery. The analysis of the pedestrian walking routines, as well as analysis of the necessary and possible programs and functions and their impact on the citizens was crucial in designing the new project solution.

Findings and Results

The interviews as well as conducted architectural, urban, historical, social, bioclimatic and environmental analysis helped in determining the best character of the new proposal for this open public space: MULTIFUNCTIONAL public space that will gather all the people gravitating in this area. The functions were clearly defined after a questionnaire was given to the citizens of this urban fragment to state what is lacking in this area. The interview showed that 72% of the citizens of this neighborhood said that they need a green market nearby, 81% said that this public space is very unsafe and needs more lights, small stores and public bathrooms. The young people (32%) said that the discotheque that was near this location is closed so they prefer a new open space for gathering at the night

that involves music, performances and cultural programs. The people that work nearby (45%) said that they need an open space where they can sit, relax eat their lunch closer to the river Vardar. These results defined the new program content of the chosen public space: green market, parking, public bathrooms and shops, place for gathering during the day and night. All these functions (shopping, gathering, relaxing, playing, parking cars and bicycles, organizing events) should be performed on one place in different periods of the day, or in different days of the week.

Conclusions and Recommendations

City planning should be people centered, rather than design centered. A city is a constantly evolving organism, and city planning must take a broader perspective than the design of individual buildings. Reuse of “brownfield” locations instead of new ones is very important sustainable principle for improving the qualities of a city [7]. Revitalization of locations in the center of the city that have lost their mining through time by adding new urban contents that enlighten the context of social cohesion - making them socially vibrant places represents an imperative in the conducted research.

The goal of this research was to show that bioclimatic urban revitalization should be understood as multidisciplinary approach: analyzing all the possible aspects important for certain location in order to achieve quality solutions that will serve well for present and future generations enabling them to live in healthy, sustainable and socially vibrant environments.

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Indoor environment after energy refurbishment of a large scale public building

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Over eight percent of overall EU building sector belongs to Sports and Recreation Building Stock; it means that out of all public buildings in EU one and a half million belongs to sports. It's been estimated that out of whole building sector these buildings are accounting up to ten percent of total annual energy consumption. Overall energy use was about 1,768 [Mtoe]. There is the potential to reduce energy consumption of about 21 [Mtoe] on a yearly base in the EU Sport Facility Building Stock. [1] This is considered as a very significant amount of energy. Beside huge benefit of energy saving in this sector indoor air quality conditions have to be taken under consideration; thermal, hygienic or visual. Especially, when it comes to emergency conversion of large scale public buildings into hospitals due to infective nature of the newly discovered diseases like COVID 19. Most of the sport centres with universal sport halls as a main capacity in Europe, were built from 1960 to 1980. At the time of construction, energy efficiency and indoor air quality was not existing as a priority, as part of the designing process. Now, regulations on energy saving are more stringent. These facilities must be refurbished and then well maintained in terms of energy consumption and indoor environment. The paper investigates use of passive technologies and newly formed comfort conditions after adaptation of defined strategies. The case study includes sport centre built in 1974 in Belgrade, Serbia. Different passive measures applied on the building structure and benefits in the sense of reducing total annual energy consumption for space heating, as well as conditions related to the indoor air quality were simulated in software package Integrated Environmental Solutions Virtual Environment, IES VE 2017.

Key words: *Indoor air quality, Sport facilities, Energy saving*

Impacts of wind parks and wind energy development on bird species

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Abstract: With the development of renewable energy projects in the last decade, countries aim to fulfill their role in creating a greener future and protecting the environment. Energy from wind plays a key role in this aspect, by providing clean energy with installed 743 GW capacity worldwide. Except for the benefits which come from wind energy, there is a significant risk of avian wildlife from wind turbine blades, where birds often receive fatal blows. In the last decade, we have seen an enormous increase in investments, in the field of energy generation from wind turbines, by installing a larger capacity of wind parks and increasing the size of wind turbines. It is clear that this growth trend will continue with even greater intensity in the future, which makes us think seriously about the avian wildlife risks. By knowing the impacts of wind turbines on avian wildlife, we can propose solutions on how to manage and prevent these risks in the near future. The research process will cover the situation worldwide including research in North Macedonia. A solution will be proposed on how to prevent birds from getting closer to the wind turbine.

Keywords: wind energy, wind turbine, development, protection, birds, avian wildlife, risks

Introduction

To achieve near zero carbon dioxide emissions, and switching all on renewable sources, we must face an enormous increase of investments in projects like photovoltaic systems, wind energy systems, etc.[1] Even the fact that we were in Covid-19 time, the projects in the field of renewable energy sources were not stopped so that in recent years they participate with 36% in the electricity sector [1]. Even the fact that renewable energy is eco-friendly and do not harm the environment, there is still some impacts which can't be ignored. The impact of wind parks or wind turbines on avian wildlife is one of the areas which concerns[2]. According to [3] in the US has been reported a turbine collision mortality for 300 bird species, and in North America bird fatalities have ranged between 140,000 and 679,000.

Purpose of Study

Firstly the research will cover the process of wind energy development through the last decade, and the projections in the near future then will focus on impacts on the environment especially on birds and bat species. The research will present the impacts of wind turbines on birds in the region and worldwide, analyze applied methods for mitigating the risks and propose a system that will prevent birds from approaching wind turbines. The purpose of this research is to analyze the impact and causes that lead to the fatality of birds and find a solution that will contribute to saving avian wildlife from wind turbines [4].

Research Methods

The research will be carried out by data collection and analysis of different studies worldwide. Collecting data on mortality of birds and bat species from wind turbines worldwide and in the region.[4] Comparing data from the past decade, and making projections for the next decade based on the growth trend of investments in wind energy projects[5], [6], [7].

Findings and Results

The data for wind turbine impacts on avian wildlife for the last decade will help us project the impact of wind energy development in the future. The collected data will serve to present a general picture of the relation between wind turbines and birds. As a result, a system will be proposed which will provide a solution to this problem.

Conclusions and Recommendations

Renewable energy projects are the only alternative to provide clean and sustainable energy for the future. Although they have an eco-friendly approach, there are still some negative effects that sometimes prevent these projects from being implemented. This research provides an approach to the negative impact that wind parks have on birds and proposes a solution that will be further subjected to the analysis process and opportunities for realization.

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Analyses Of Ecological Indicators of Energy Management in The Transition to Sustainability By Devising a Software System

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Abstract: The purpose of the research study is analyses and assessment of the Ecological Indicators of Energy Management in The Transition to Sustainability and measure the current state by devising a software system to do so. The global community is using natural resources very intensely – at rates exceeding nature’s ability to regenerate their productivity potential. Economically developed countries throughout the whole world should prepare a new sustainable development strategy including the marked development of renewable natural resource production, as well as the effective implementation of various environmental protection measures. The goal of this paper is to assess the Ecological Indicators of Energy Management in The Transition to Sustainability and realize a review, and synthesis of opportunities for future research. There is a gap in published research regarding current Ecological Indicators of Energy Management in The Transition to Sustainability and what are the required for achieving sustainability. The research aims to approach the analysis of the emerging trends in Ecological Indicators of Energy Management in The Transition to Sustainability and comparison using qualitative method and questionnaire as well as two focus groups. The research methodology used is triangulation technique which combines qualitative and quantitative methodology. The issues, findings as well as recommendations are discussed and argued.

Keywords—ecology, pollution, biodiversity, information system, energy management, rising public awareness

Introduction

The global community is using natural resources very intensely – at rates exceeding nature’s ability to regenerate their productivity potential. Nature can renew its resources, however, only at a certain pace. People are constantly consuming more renewable resources than the nature is able to regenerate. Man’s actions are changing various segments of natural capital and this depletion or deterioration of the reserves diminishes the quality of inclusive human well-being, and causes obstructions on sustainable development.

Sustainable development means that the needs of the present generation should be met without compromising the ability of the future generations to meet their own needs. Environment pollution is one of the major problems of today’s society. Raising public awareness among citizens and encouraging a sense of responsibility in the protection and promotion of the environment, by animating the young population in taking measures to prevent or reduce environmental pollution. This research is important to be undertaken and solved because they pose threat to life and wellbeing of all citizens and bring different other illnesses. Biocapacity is the ecosystems’ capacity to produce biological materials used by people, and to absorb waste material generated by people and CO₂, the measure of human demand on the Earth’s ecosystems. Basically, it is the comparison between the needs of humanity, and the planet’s capacity to regenerate, representing the surface of biologically productive land and sea, which is necessary to supply the renewable resources a human population consumes, and absorb the waste produced in that process.

Literature Review

The development of sustainability concept goes back to ancient times. For hundreds of years people have understood the need for a bigger life-support system than the Earth can provide. This understanding is apparent in people’s planting seeds in the ground, protecting native flora and fauna, and preserving the rivers, lakes and seas. Nevertheless, the idea of sustainability in actual appearance was mostly highlighted by the United Commission on the Environment (UNCED) in 1987. At the time, Gro Brundtland, chairperson of the Commission, wrote the following text: "Environment is where we live; and development is what we all do in attempting to improve our life within that home. The two are inseparable."² The Commission claimed that sustainability "meets the needs of the present without compromising the ability of future generations to meet their own needs." Brundtland’s persuasively written description convinced the audience that the change to sustainability would have to end and slow down the deterioration of the eco-life and of Earth’s reserves globally. Since the request for Global Action by the Brundtland Commission, the UN has emphasized the importance for change to sustainability by organizing a number of symposiums and signing contracts. For some time, the global public has undertaken an initiative for an inclusive set of sustainable development objectives³, and a number of measures have been undertaken in the world. They are aimed toward: reducing starvation and impoverishment; improving medical protection, birth prevention and schooling; and, improving agricultural productivity, while decreasing habitat deterioration.

Today, thousands of administrative and non-administrative corporations, private companies and persons around the globe have accepted the concept of sustainability and started to raise awareness and have funds for sustainability plans. Companies have provided metrics to follow the economic, social and environmental effects of their activities.

Metropolises around the globe have formed and offered organizations to participate in recommended practices and promote progress. Local and global examples are present all over the globe. Such examples are: student organizations, the national science and engineering academies, and numerous professional scientific organizations. The World Business Council for Sustainable Development and the Alliance for Science and Technology for Global Sustainability have created inter-departmental groups of members from private and public sectors to follow strategies for sustainability objectives. The social perception of sustainable development is quickly developing as a consequence of these measures. It is expanding from satisfying Brundtland's human needs toward inclusive social well-being.

Well-being is the state of being comfortable, healthy, and secure due to having basic needs met, as well as having access to health, education, community, and opportunity. The essence of the human experience of well-being is a combination of material, social, and personal fulfillment. Inclusive social well-being is well-being of individual people gathered across space and time⁴. Matson P. et al, define development to be sustainable over places and times in which inclusive social well-being does not decline. They often use the expression "inclusive well-being" or just "well-being".

Purpose of Study

The purpose of the research study is the analyses and assessment of the emerging trends of Of Ecological Indicators of Energy Management in The Transition to Sustainability. We are using qualitative method and questionnaire as well as two focus groups.

The entire shift of the progress of civilization to "sustainable development" depends to a large extent on the transition from the use of conventional energy sources to alternative ones, and in order to promote alternative sources, it is necessary to emphasize that the basic tool for this endeavor is Energy Management (EM). The main goal of EM is to increase profits by reducing costs in all forms of energy consumption, while one of the most important specific goal is reduction of emissions of harmful gasses and reduction of air pollution.

Research Methods

The research methodology used is triangulation technique which combines qualitative and quantitative methodology. As research method used quantitative method using questionnaire and focus groups.

Hypothesis H1: The proper definition of Ecological Indicators of Energy Management in The Transition to Sustainability can increase the biocapacity level and reduce pollution.

Main research questions are: What are the main emerging Energy Management in The Transition to Sustainability? What are the Ecological Indicators? How can we improve the current Sustainability level? What are the major challenges in energy management?

Findings and Results

The expected findings and arguments of the work provides sufficient information on the factors that influence the definition of Ecological Indicators of Energy Management in The Transition to Sustainability and assessment of the different requirements for energy management.

Conclusions and Recommendations

The research study provides a review of the published literature as well as an analyses of the emerging trends of factors that influence the definition of Ecological Indicators of Energy Management in The Transition to Sustainability.

The impact on Energy management has been analyzed, and insights and results have been provided. Our method shows that findings for Energy Management issues (increased energy use, limited raw fuel reserves, global warming, etc.) and then develop and increase awareness and perception of the Ecological and Energy Footprint as indicators of sustainability and Energy Management.

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The presence and treatment of environmental subjects in the Macedonian printed media

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Abstract: Environmental protection and pollution are globally gaining visibility among the general public, especially in the last decade. The media have substantial power in terms of environmental awareness raising and significant influence in creation of public opinion for environmental challenges. This paper deals with the presence and treatment of environmental issues in printed media in Macedonia. The frequency of articles, their structure, analytical level and area of interests, are analyzed via the research of the content of three Macedonian daily papers. The main findings show that environmental issues are present with less than 1% in the overall newspapers content. Moreover, very often the articles are not firmly elaborated. The core of the problem is rarely explained. In addition, the environmental topics in printed media are often misused for political promotion in affirmative and positive articles. There is lack of objective environmental analyses useful for problems solving. Thus, additional efforts are required for raising the public awareness for environmental topics, as well as for strengthening the capacities of the journalists.

Keywords: environment, media, awareness

Introduction

Having in prospect that the hazardous effects of the pollution are long time ago scientifically justified, the topics regarding environmental protection and environmental hazards gain in importance, and are often present in the media. Macedonian media are not an exception. Elaboration of these topics in the media, contributes towards awareness raising among general public and urges decision makers to address and solve the problems.

Purpose of Study

The purpose of the research is to determine the way in which the printed media in Macedonian language inform regarding the issues in the field of environment (frequency, subjects and quality). In order to answer these questions, an analysis of the content of the selected media (Vecer, Nova Makedonija and Sloboden Pecat in the period January - June 2018) was made.

Research Methods

The research used the method of content analysis, combined variant - quantitative and qualitative content analysis. This analysis encompasses classification of the published articles having in prospect the specific area of interests (environmental medium and environmental area) that they cover as well as the way of treatment (main topic or reference topic). The classification of environmental media and areas was made in accordance with the national Law on Environment.

Findings and Results

The research showed that the articles in environmental topics are less than 1% in the overall content of the analyzed newspapers. Usually the environment is not main topic, but only a reference topic, and environmental events are often used to highlight the activities of public institutions. Only one of the analyzed newspapers has more advanced approach regarding these subjects, including their profound elaboration. There is lack of information on global environmental threats and the consequences for our country, such as global warming and climate change. Air pollution is the most treated subject, in particularly during the winter. On the other hand, some local and non-essential topics are often present, as well as misuse of environmental topics for media promotion of the politicians (in particularly mayors).

Conclusions and Recommendations

The presence of the environmental topics in Macedonian printed media is not at all satisfactory. There is a lack of comprehensive analysis and research stories that are in particularly important in the process of public awareness raising, but also as a corrector of policy maker's actions. The further activities for overcoming this situation are twofold - firstly, strengthening the capacities of the journalists for addressing these issues, and secondly, improving the general education and the awareness raising of the citizens for the importance of the environmental protection.

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Robust Optimization for Determining Load Supply Capability under Uncertain Power Demand

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Abstract: The decision – making process of operation and planning of the power systems is becoming more challenging due to the level of uncertainty. The uncertainty may arise as a result of distributed energy sources or demand load. Recently, the robust optimization method is applied to handle different series of uncertainties that may arise in power systems. In this paper the uncertainty that arises from power demand is observed, where the uncertainty is expressed through the uncertainty set.

Keywords: load supply capability, robust optimization, uncertainty budget, uncertainty set

Introduction

The decision – making process of operation and planning of the power systems is becoming more challenging due to the level of uncertainty. These uncertainties may arise as a result of several reasons such as: generation availability (the penetration of renewable energy sources-RES), weather interruptions, price of various types of energy, transmission capacity, market rules, load demand etc. [1]. In 72% of the papers main topics are uncertainty in power demand and power output of DG (Distributed Generation – Renewables) [4]. Many different optimization methods have been applied in order to find an optimal solution to the problems with uncertain parameter [2]. Many of the traditional approaches are used to solve these problems. Some of them are: information gap decision theory (IGT) technique, probabilistic methods, interval based analysis, possibilistic procedure, hybrid probabilistic and possibilistic methods [2]. However the disadvantage of these methods is the difficulty of describing the uncertain parameter by using probability distribution functions. The robust optimization (RO) method is proposed as an optional method to solve problems which contain uncertainty without requiring any probability distribution function. RO model embodies a preventive view: it is an ex - ante protection against the worst uncertainty realization, within the uncertainty set [3],[5]. In this paper we calculate the load supply capability (LSC) considering the uncertainties in the load demand side. The uncertainty set is defined in a manner that it allows each load to deviate from its reference value by an amount which is defined as gamma (Γ). Then, the optimization problem with all constraints is modeled by using the YALMIP in MATLAB. The configuration of the network is taken from the MATPOWER, namely the file case0.

Purpose of Study

The main goal of this paper is to understand the application of robust optimization in calculating the LSC under uncertain power demand. RO is an alternative method to handle optimization problems with uncertainty parameters. Due to the lack of data, it is not always possible to have the possibility distribution function of the uncertain parameter. Therefore, RO may be a solution to this issue because this method does not need probability distribution function. Instead, we express the uncertainty with an uncertainty set.

Research Methods

The load demand forecast is uncertain and it is difficult to define a single exact value for each load. It is more likely that the forecasted demand will be given in a form of interval values as below:

$$\underline{D}_i = D_i^{\text{ref}} - D_i^{\Delta}$$
$$\overline{D}_i = D_i^{\text{ref}} + D_i^{\Delta}$$

With the above uncertainty set we state that the load demand D_i will deviate around its reference value D_i^{ref} by the amount D_i^{Δ} for each $i = 1, 2, \dots, n_d$. n_d expresses the number of loads in the network. We express the deviation in percent of the reference load demand $D_i^{\Delta} = \frac{\Delta}{100} \cdot D_i^{\text{ref}}$.

On the other hand, we limit the variability of uncertain variables through the so-called uncertainty budget Γ which is defined as

$$\sum_{i=1}^{n_d} |D_i - D_i^{\text{ref}}| \leq \Gamma \cdot \sum_{i=1}^{n_d} D_i^{\Delta}$$

Where Γ varies between 0 and 1.

The expression $|D_i - D_i^{\text{ref}}|$ can be linearized by introducing variable x_i and adding the following constraints

$$x_i \geq D_i - D_i^{\text{ref}}, i = 1, 2, \dots, n_d$$

$$x_i \geq D_i^{\text{ref}} - D_i, i = 1, 2, \dots, n_d$$

The network model of case0 from matpower for the robust optimization is presented as follows in its matrix form:

$$LSC = \min_{\delta, \mathbf{D}, \mathbf{X}} \{\delta, \mathbf{D}, \mathbf{X}\}$$

$$\underline{\mathbf{D}} \leq \mathbf{D} \leq \overline{\mathbf{D}}, n_d \times 1$$

$$\mathbf{I}_d \cdot \mathbf{x} \leq \Gamma \cdot \mathbf{I}_d \cdot \mathbf{D}^\Delta, 1 \times 1$$

$$\mathbf{x} \geq \mathbf{D} - \mathbf{D}^{\text{ref}}, n_d \times 1$$

$$\mathbf{x} \geq \mathbf{D}^{\text{ref}} - \mathbf{D}, n_d \times 1$$

$$\delta = \max_{m, \mathbf{P}, \boldsymbol{\theta}, \boldsymbol{\varphi}, \mathbf{F}} \{m, \mathbf{P}, \boldsymbol{\theta}, \boldsymbol{\varphi}, \mathbf{F}\}$$

$$\mathbf{C}_g \cdot \mathbf{P} - \mathbf{A} \cdot \mathbf{F} - \mathbf{C}_d \cdot \mathbf{D} \cdot m = 0, n_d \times 1 (\mathbf{N})$$

$$\boldsymbol{\varphi} - \mathbf{A}^T \cdot \boldsymbol{\theta} = 0, n_l \times 1 (\mathbf{V})$$

$$\mathbf{F} - \text{diag}(\mathbf{B}) \cdot \boldsymbol{\varphi} = 0, n_l \times 1 (\mathbf{L})$$

$$\mathbf{P} \leq \overline{\mathbf{P}}, n_g \times 1 (\mathbf{Q})$$

$$-\mathbf{P} \leq \underline{\mathbf{P}}, n_g \times 1 (\mathbf{R})$$

$$\mathbf{F} \leq \overline{\mathbf{F}}, n_l \times 1 (\mathbf{G})$$

$$-\mathbf{F} \leq \underline{\mathbf{F}}, n_l \times 1 (\mathbf{H})$$

Primal variables:

$$m, \mathbf{P}(n_g \times 1), \boldsymbol{\theta}(n_b \times 1), \boldsymbol{\varphi}(n_l \times 1), \mathbf{F}(n_l \times 1)$$

Dual variables:

$$\mathbf{S}, \mathbf{N}(n_b \times 1), \mathbf{V}(n_l \times 1), \mathbf{L}(n_l \times 1), \mathbf{Q}(n_g \times 1), \mathbf{R}(n_g \times 1), \mathbf{G}(n_l \times 1), \mathbf{H}(n_l \times 1)$$

Where n_b is the number of nodes, n_d the number of loads, n_l the number of branches, n_g the number of generators, vector \mathbf{P} represents the active power of generators, vector \mathbf{D} represents the active power of loads, vector \mathbf{F} represents the load in the branches, vector $\boldsymbol{\theta}$ represents the phase angle of each node, vector $\boldsymbol{\varphi}$ represents the phase difference between the ends of each branch, matrix \mathbf{A} is the incidence matrix, \mathbf{B} is the susceptance matrix, \mathbf{C}_g is the connection matrix generator – bus, \mathbf{C}_d is the connection matrix demand – bus,

The Dual form of the above stated model is going to be as follows:

Since $\boldsymbol{\theta}$, $\boldsymbol{\varphi}$ and \mathbf{F} are free variables (they can be not only < 0 , but also > 0) in the dual form all constraints constructed with the coefficients multiplying these variables will be given as equalities. On the other hand, since $\mathbf{P} \geq 0$ corresponding constraints in the dual form will be given as inequalities of type \geq .

Variables $\mathbf{S}, \mathbf{N}, \mathbf{V}, \mathbf{L}$ are free variables since they are introduced for constraints of equality type, therefore there is no need to introduce limits on their values. The other variables, $\mathbf{Q}, \mathbf{R}, \mathbf{G}, \mathbf{H}$ should be constrained to positive values (≥ 0) since they are introduced for constraints that are of inequality type.

$$\Omega = \{\mathbf{D}, \mathbf{x}, \mathbf{S}, \mathbf{N}, \mathbf{V}, \mathbf{L}, \mathbf{Q}, \mathbf{R}, \mathbf{G}, \mathbf{H}\}$$

$$LSC = \min_{\Omega} \{ \overline{\mathbf{P}}^T \cdot \mathbf{Q} - \underline{\mathbf{P}}^T \cdot \mathbf{R} - \overline{\mathbf{F}}^T \cdot (\mathbf{G} + \mathbf{H}) \}$$

$$\underline{\mathbf{D}} \leq \mathbf{D} \leq \overline{\mathbf{D}},$$

$$\mathbf{I}_d \cdot \mathbf{x} \leq \Gamma \cdot \mathbf{I}_d \cdot \mathbf{D}^\Delta,$$

$$\mathbf{x} \geq \mathbf{D} - \mathbf{D}^{\text{ref}},$$

$$\mathbf{x} \geq \mathbf{D}^{\text{ref}} - \mathbf{D},$$

$$-(\mathbf{C}_d \cdot \mathbf{D})^T \cdot \mathbf{N} \geq 1$$

$$\mathbf{C}_g \cdot \mathbf{N} + \mathbf{Q} - \mathbf{R} \geq 0$$

$$\mathbf{I}_s^T \cdot \mathbf{S} - \mathbf{A} \cdot \mathbf{V} = 0$$

$$\mathbf{V} - \text{diag}(\mathbf{B}) \cdot \mathbf{L} = 0$$

$$-A^T \cdot N + L + G - H = 0$$

$$Q \geq 0$$

$$R \geq 0$$

$$G \geq 0$$

$$H \geq 0$$

Findings and Results

The network case0 from matpower is observed. We allow each consumer (demand) to deviate by $\Delta = 20\%$, and the uncertainty budget is figured out to be in its worst situation which means that $\Gamma = 1$.

For the particular network we have 3 load with reference values 95, 100 and 85 MW. So the total load capability for the reference situation is 280MW. After the robust optimization is done it is observed that for the worst situation the LSC = 281.7MW.

Conclusions and Recommendations

In this paper the RO for the network cas0 was analyzed. The results of analyses show that LSC can be increased 1.7 MW satisfying the network constraints in its worst condition. One of the advantages of RO method is that the uncertainty is not expressed by PDF (Probability Distribution Function) but by the uncertainty set.

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Estimating Covid-19 Vaccine Efficacy in North Macedonia from Publicly Available Data

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Abstract: The Ministry of Health of the Republic of North Macedonia regularly publishes official data on the situation on Covid-19 in the country. The published numbers are, however, raw data from which various statistics yet have to be calculated. I show a calculation to estimate the vaccine efficiency from the officially published raw data and its evolution by week. The risk ratio (RR) and the vaccine efficiency (VE) are calculated for preventing (1) hospitalization and (2) death among those infected with the novel coronaviruses. Aggregate data published by the Ministry of Health are disaggregated in order to make more visible the worsening of the vaccine efficacy and the related parameters in the recent weeks.

Keywords: covid-19 statistics, vaccine efficacy, risk ratio, coronavirus, pandemic

Introduction

The Ministry of Health of the Republic of North Macedonia started publishing the numbers of vaccinated among Covid-19 infections, hospitalizations and deaths that describe the situation in the country as of August 6, 2021. Raw data are presented on two governmental sites ([1], [2]). The data are always presented cumulatively and include all cases since Aug 6, 2021. In these data, fully vaccinated against Covid-19 are considered the persons who have been vaccinated with two doses of an approved vaccine and at least 14 days have passed since receiving the second dose. The vaccines against Covid-19 used in North Macedonia are (1) Pfizer/BioNTech BNT162b2 (mRNA), (2) Gamaleya Sputnik V (Non Replicating Viral Vector), (3) Serum Institute of India Covishield AZD1222 (Non Replicating Viral Vector), (4) Sinovac CoronaVac (Inactivated), and (5) Sinopharm Beijing BBIBP-CorV (Vero Cells, Inactivated). Some people are vaccinated abroad with other types of vaccines. The numbers or proportions of each of these vaccines used are not published in order to claim to the hoi polloi that all vaccines are equally efficacious.

Purpose of Study

The objective of this study is to estimate the vaccine efficacy against (1) death and (2) hospitalization after being infected with SARS-CoV-2 based on the officially published data by the Government of North Macedonia. As the official data is aggregated over a period of twelve weeks at the time of this writing, disaggregation of data by week is performed to provide a better view of some facts that are less obvious in the original published numbers.

Research Methods

In order to calculate the vaccine efficacy against death (VE_d) after being infected in North Macedonia, I introduce the following notation. Let D_n denote the number of deaths among the infected unvaccinated persons in a given period. Accordingly, let I_n denote the number of infections among the unvaccinated persons as detected at official accredited testing facilities. After being infected, the risk of dying while unvaccinated or partly vaccinated is then estimated as D_n / I_n. Similarly, the risk of dying while being fully vaccinated is estimated as D_v / I_v, where D_v denotes the number of deaths among the vaccinated persons and I_v is the number of infections among the vaccinated persons as detected by official testing. I calculate the risk ratio (unvaccinated with respect to vaccinated) between the two risks defined above as RR_d = (D_n / I_n) / (D_v / I_v). Then the vaccine efficacy against death after being infected can be estimated as VE_d = 1 - 1/RR_d.

In order to calculate the vaccine efficacy against hospitalization (VE_h) after being infected, I introduce the following notation. Let H_n denote the number of hospitalizations among the infected unvaccinated persons and let I_n denote the number of unvaccinated infected persons. After being infected, the risk of being hospitalized while being unvaccinated or partially vaccinated is H_n / I_n, while the risk of being hospitalized while being fully vaccinated is H_v / I_v. The risk ratio for hospitalization after being infected (unvaccinated/vaccinated) is RR_h = (H_n / I_n) / (H_v / I_v) = (H_n / (H I_n)) / (H_v / (H I_v)). The multiplication of the numerator and the denominator by 1/H is necessary since H_n and H_v are not officially published, but the fractions of unvaccinated hospitalized H_n / H and the vaccinated hospitalized persons H_v / H with respect to the total number of hospitalized persons H are published on a weekly basis. An estimate of vaccine efficacy against hospitalization after being infected can then be calculated as VE_h = 1 - 1/RR_h.

Findings and Results

The findings are shown in Figures 1-5.

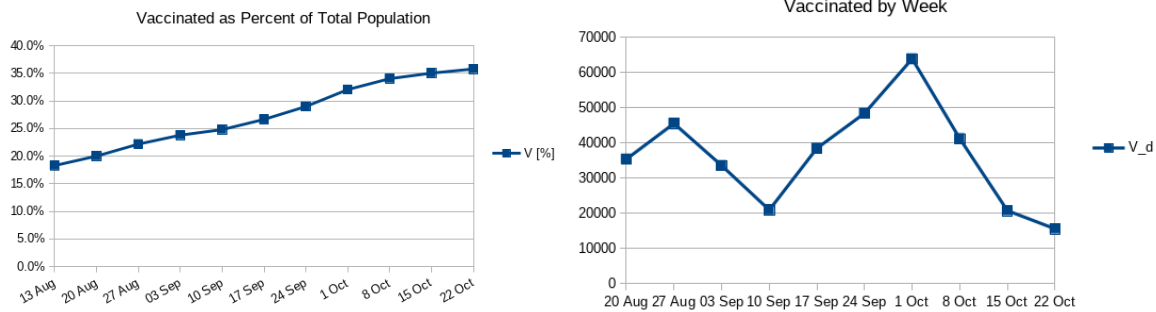


Figure 3 Fraction of vaccinated (V) with respect to the whole population, cumulative (left) and disaggregated by week (V_d) (right)

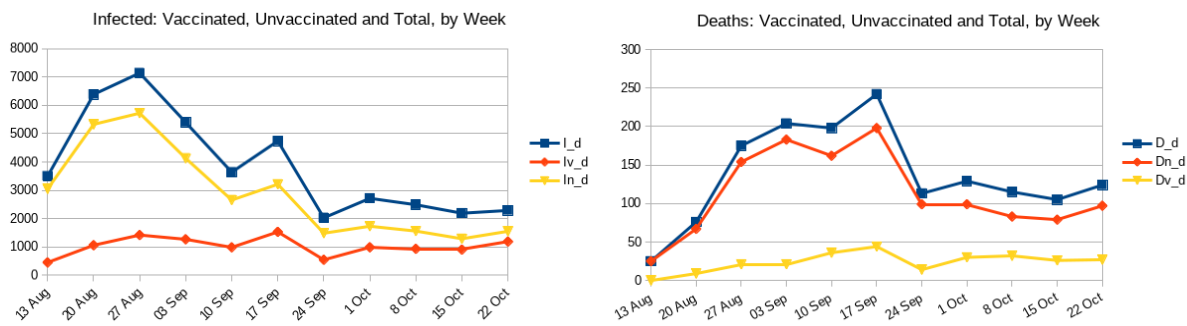


Figure 4 Infected (left) and deaths (right), disaggregated by week (d), with fractions of vaccinated (v) and unvaccinated (n)

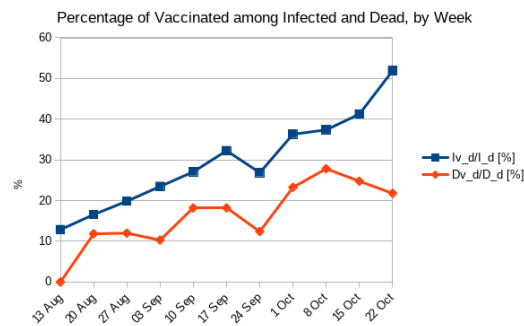


Figure 5 Percentage of vaccinated (v) among the infected (I) and the deaths (D), disaggregated by week

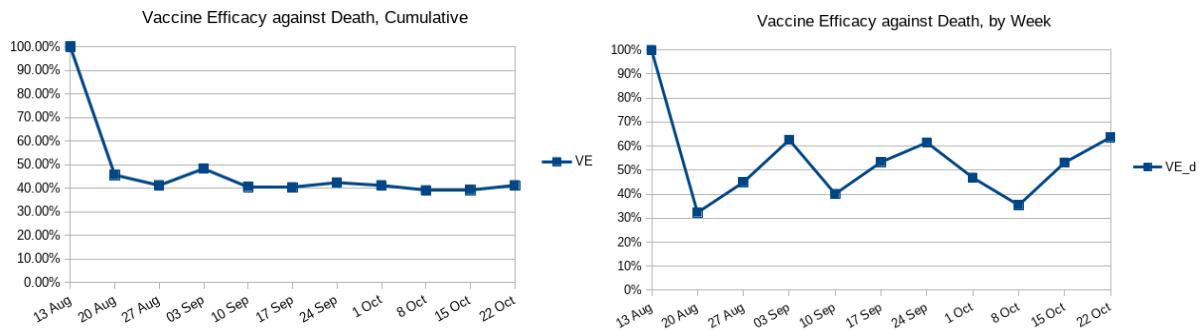


Figure 6 Vaccine efficacy against death (VE), cumulative (left) and disaggregated by week (d) (right)

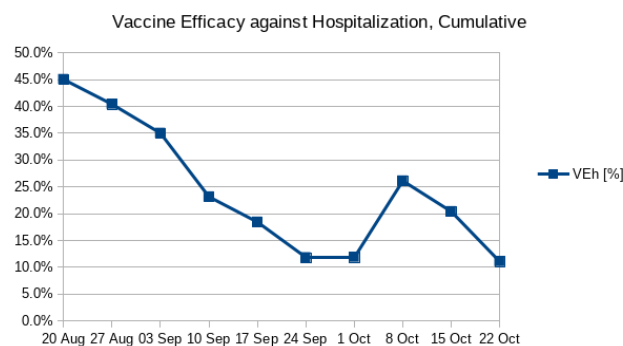


Figure 7 Vaccine efficacy against hospitalization (VEh), cumulative

Conclusions and Recommendations

Vaccine efficacy against death after infection is currently about 40% in North Macedonia. Vaccine efficacy against hospitalization after infection is notably declining as of this writing. Disaggregation of data provides a better view of relevant details as compared to the raw cumulative and aggregated data. The Government of North Macedonia recently finally admitted the need of getting a third booster dose as early as three months after the second dose for people who have received two doses of the Sinopharm or the Sinovac vaccine, and six months after receiving two doses of any of the remaining administered vaccines.

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On the Utilization of Space Dimensionality for Efficacious Greedy Euclidean Embedding

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Abstract: We examine the success rate and the hop stretch of greedy geometric distance routing executed on a two-dimensional wireless graph embedded in the Euclidean plane. Greedy routing is an interesting alternative to IP routing, as it requires small state, is based on local knowledge and uses a very simple routing algorithm. Unfortunately, greedy routing is not always successful on physical coordinates, even if a path exists. Further, routes deviate from the corresponding shortest paths between pairs of nodes. Hop stretch measures the deviation from the shortest path. It is desirable for the success rate to be as high as possible and the hop stretch to be as low as possible.

In this experiment, a wireless graph is embedded in 2-dimensional Euclidean space and is placed inside an ellipse. The aspect ratio of the embedding is gradually changed from ellipse to circle, while the area of the ellipse is kept constant. It turns out that both the success rate and the hop stretch of the routing improve as the ellipse approaches a circle. The average hop stretch, the maximum hop stretch and the longest route all decrease and are the best for an ellipse constant equal to one. The experiment can be repeated for higher-dimensional spaces. We conclude that success rate and hop stretch for geometric routing are the best when all dimensions of the underlying geometric space are maximally utilized by the embedding.

Keywords: graph embedding, greedy routing, wireless graph, hop stretch, dimensionality utilization

Introduction

Greedy routing is an interesting alternative to IP routing, as it requires small state, is based on local knowledge and uses a very simple routing algorithm. Unfortunately, greedy routing is not always successful on physical coordinates, even if a path exists. Further, routes deviate from the corresponding shortest paths between pairs of nodes. Hop stretch measures the deviation from the shortest path in terms of hops, whereas geometric stretch measures the deviation from the shortest path as measured by the Euclidean of the path along the hops. Hop stretch measures the deviation from the shortest path. It is desirable for the success rate to be as high as possible and the hop stretch to be as low as possible.

Purpose of Study

In this experiment a wireless graph is embedded in 2-dimensional Euclidean space and is placed within an ellipse. The aspect ratio of the embedding is changed, from ellipse to circle while the area of the ellipse is kept constant. The objective is to show that both the success rate and the hop stretch of the routing improve as the ellipse approaches a circle. The average hop stretch, the maximum hop stretch and the longest route all decrease and are the best for an ellipse constant equal to one.

Research Methods

A wireless graph is embedded inside a circle. After that, the largest connected component is retained. The aspect ratio of the embedding is gradually changed as a parameter, making the circle an ellipse with a decreasing ellipse constant, resulting in a more and more oblong, one-dimensional-like ellipse. For each value of the parameter, the following results are reported: (1) the success rate of the greedy routing on the graph in percent; (2) the longest route for the configuration in hops; (3) the average hop stretch over all the pairs of the graph; (4) the maximum stretch over all the pairs of the graph; (5) the average geometric stretch as a ratio of the Euclidean length of the path relative to the shortest path over all node pairs; and (6) the maximum geometric stretch.

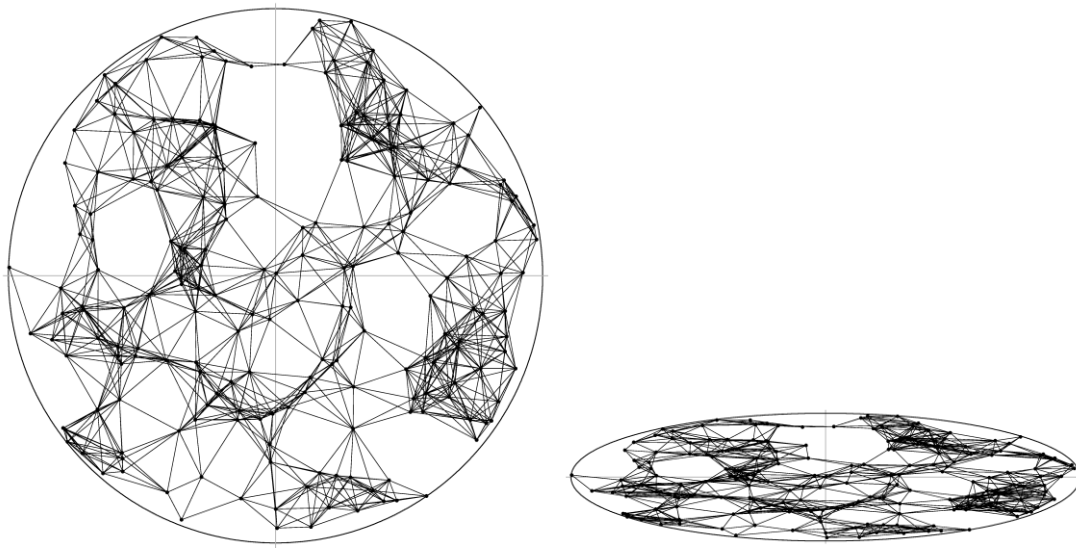


Figure 8 Scaling the ellipse constant toward a one-dimensional structure

Findings and Results

The results are shown in Figures 1-4 below. Each point on the graphs corresponds to one ellipse. The rightmost point corresponds to an ellipse constant of 1 i.e. a circle representing a full utilization of the 2-dimensional space. Lower ellipse constant means more eccentric or oblong ellipse. The leftmost point corresponds to an oblong ellipse, representing an "almost one-dimensional" structure. The scaling of the embedding is done such that the area of the ellipse is kept constant. In the experiment, greedy routing was run and the success rate of greedy routing, the hop length of the longest route as well as average and maximum hop and geometric stretch were measured for each embedding instance. All parameters improved as the ellipse moved close to a circle.

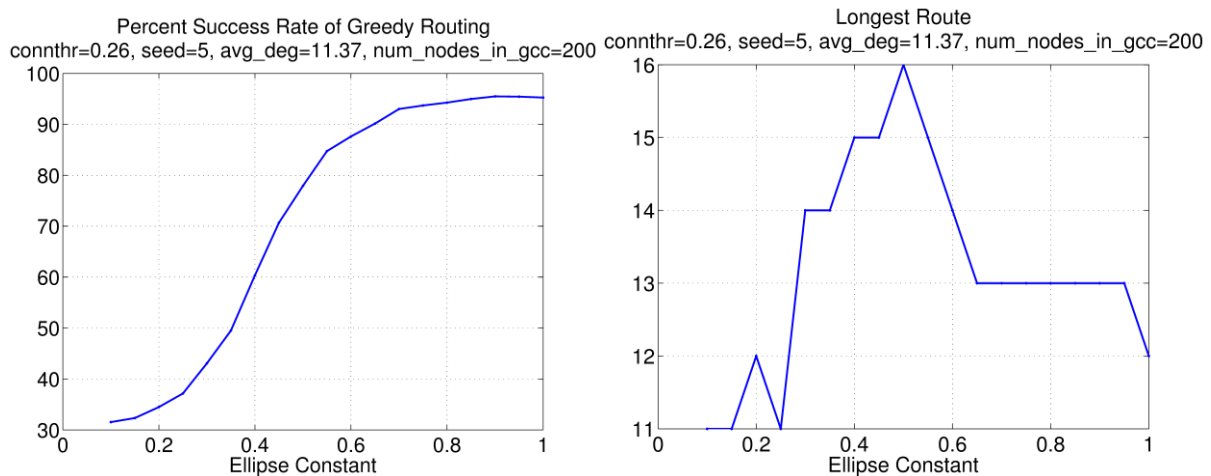


Figure 9 Success rate and the longest route as functions of the ellipse constant

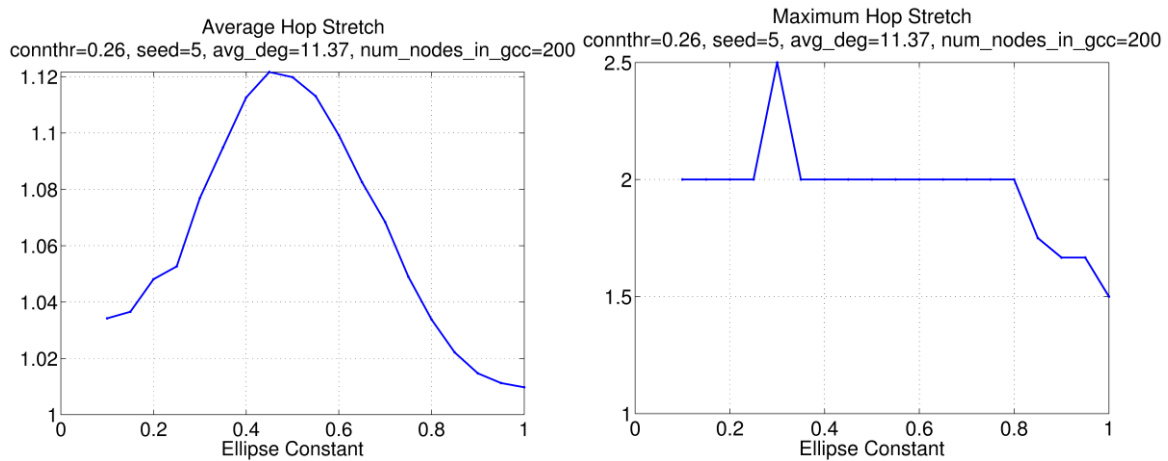


Figure 10 Average and maximum hop stretch as functions of the ellipse constant

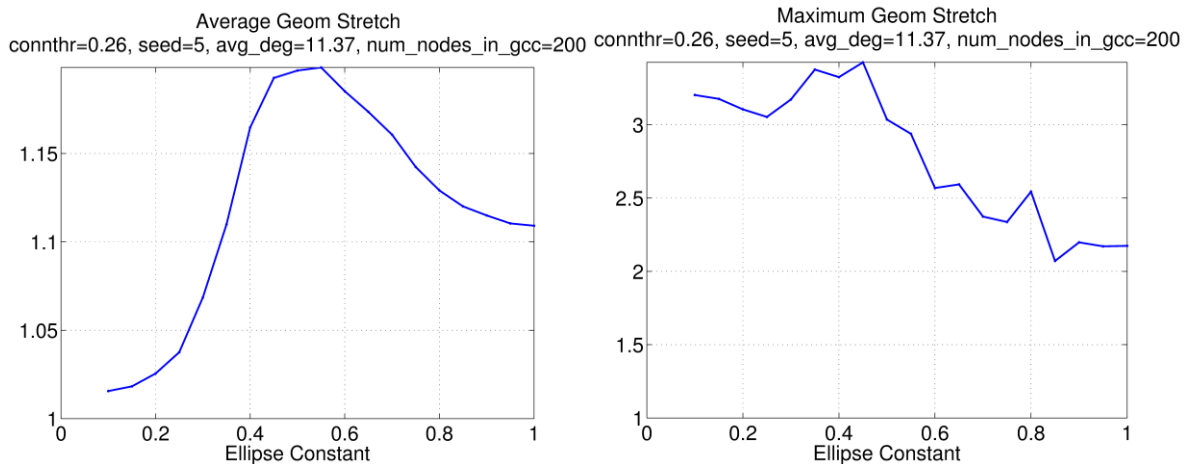


Figure 11 Average and maximum geometric distance stretch as functions of the ellipse constant

Conclusions and Recommendations

We conclude that success rate and hop stretch for geometric routing are the best when all dimensions of the underlying geometric space are maximally utilized. The experiment can be repeated for higher-dimensional spaces.

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Adaptive E-learning System based on Recommendations, implemented by Petri nets

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Abstract. In this paper - we present our research in the field of E-learning systems and the toolbox we have implemented in Matlab for an offline mode recommendations. The system gives a general recommendation about the way the student should continue to use the learning system. In order to determine the profile of individual students and their needs - we used Moodle student records that contain info about the style of learning, access to learning materials, and their achievements / success. For that purpose we have used Petri nets and the TimeStat tool that was installed as a plugin in Moodle and which provides real-time statistics of student's time spent in each online lecture (in every particular segment of the lecture). We considered the students separated by field of study (such as Economics students, Information technology students, etc.).

In our research work – we have focused on the two key areas that could bring improvements to the existing e-learning systems:

- Introducing adaptability to the learning system (the content and shape of information would change, depending on the needs of each individual student);
- Application of recommender systems in the e-learning system.

The adaptability is of particular importance in the e-learning systems for two main reasons. First, the learning system can be used by students who differ in their goals, learning styles, preferences, knowledge, and background. In addition, the profile of each student changes (e.g. knowledge increases as a result of learning). Second, the system will be able to help the student navigate the course by providing user-specific (not linear) paths.

Our student database contains records of learning styles, access to learning materials, and achievements / successes of different categories of students (such as economics students, IT students, etc.). These records will be used to determine the profile of individual students and their needs (materials). With this approach - students will receive more recommendations for learning materials, i.e. on a larger scale than they need. It will also be useful to identify associations between the different sources of information (lessons) and the students' needs for each of those lessons.

The offline recommendation mode that is practically implemented in our system, provides a general recommendation on how the student should continue to use the learning system. In doing so, we used the Timestat tool that was installed as a plugin in Moodle and provides real-time statistics of how much time the student spent in each lesson and each part of it.

Keywords: Adaptive e-learning systems, Recommender systems, Petri nets, TimeStat, Matlab.

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Assessment Of the Different Modalities of Online Teaching During COVID19Pandemic

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Abstract: The purpose of the research study is analyses and assessment of the modalities of online teaching during COVID19 Pandemic. During the COVID19 pandemic the entire educational system haschanged dramatically and shifted into different modalities of digital online education. However, there is a gap in published research regarding different modalities and their analyses, positive and negative aspects and lessons learned from this shift to digital online education.The COVID-19 pandemic enforced large inequalities in access to technology,such as between rich and poor, ruraland urban, girls and boys, across and within cities, regions and countries.The research aims to approach the analysis of the emerging trends in different modalities of online teaching and learning and their analyses and comparison using qualitative method and questionnaire as well as two focus groups.The research methodology used is triangulation technique which combines qualitative and quantitative methodology.As research method used questionnaire and focus groups.The issues, findings as well as recommendations are discussed and argued.

Keywords: online education technologies,resources for learning, covid19, digital online education, web technologies

Introduction

Because of the COVID19 pandemic an urgent response to the current situation required an increase in educators' awareness towards online teaching.Online learning platforms were often the first to be introduced to allow children to continue learning from home; In fact, they were the most effective learning method to kick-start some form of learning. However, they have the smallest range. Furthermore, another element of the digital divide refers to the digital literacy gap, a barrier that can be even more difficult to overcome. There is also a significant digital gender gap, as girls are much less likely to own or have access to digital devices and have fewer opportunities to acquire digital skills. In some countries, online platforms reach less than 10 percent of the population. Because they need electricity, a reliable Internet connection and enough devices for children at home: especially devices with good functionality and performance and sufficiently large screen sizes.

Because of this, many governments have implemented a variety of learning modalities, including those that do not require technology and used a TV channels for showing previously recorded lessons for all courses for elementary schools level or those that are more commonly known as digital online learning and their different versions and modalities.

Purpose of Study

The purpose of the research study is the analyses and assessment of the emerging trends of the different modalities of online teaching used during COVID19 Pandemicthat impacted online education using qualitative method and questionnaire as well as two focus groups.

Research Methods

The research methodology used is triangulation technique which combines qualitative and quantitative methodology. As research method used quantitative method using questionnaire and focus groups. Hypothesis H1: The proper use of modality for online education technologies can increase the knowledge transfer level. Main research questions are:What are the main emerging online technologies? What are the main learning online resources? How can we improve the online learning process? What are the major challenges in online education?

Findings and Results

The expected findings and arguments of the work provides sufficient information on the factors that influence the different modalities of online teaching and learning process as well as the analyses of the best online technologies and how much they are aligned with instructional pedagogies.

Conclusions and Recommendations

The research study provides a review of the published literature as well as ananalysesof the emerging trends of different modalities used during the pandemic from CVODI19 as well as the assessment and analyses how it did impacted online education? Based on the literature review, as the best modality has been shown the blended learning modality where the e-learning system is combined with physical classes and the student's involvement and acceptance of e-learning, deciding which of the multiple features should be implemented, in order to assist specific groups and maintain their satisfaction. Also, identifying the optimal requirements and definitions is considered as a major step in order application to be powerful and reliable.

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Analyses of the Impact of Educational Games as Learning Strategy

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Abstract: The focus of the research study is on analyses, assessment and evaluation of educational games as learning strategy for university students. In order to realize these analyses, several mobile educational games have been developed to be used for student learning process. The research study main research questions investigate how Mobile Educational Games affect students' motivation and willingness to learn, how much does it promote competition among students, in increasing students' attention and interest in the learning process; in improving student success; Research on the aspect of game adaptation by students and teachers. Depending on the findings from the study, the study suggest recommendations and ways by which universities can improve on their curriculum so that students improve their knowledge and transfer of skills. Given the widespread use of digital technologies across their studies, competencies are needed to properly drive the digital change. This assessment of learning strategy using educational games is in the form of strategic digital skills, that from an educational viewpoint is an essential measurement in order to identify knowledge level and skills transferred to students during the learning process.

Keywords: online education technologies, resources for learning, educational games, learning strategy

Introduction

Students find the traditional way of learning difficult and boring, so teachers need to find interactive tools to make their classroom more interesting and motivate students to learn more. Teachers today are using technology to engage students and encourage students to learn. Numerous studies have shown increased interest in learning by students when mobile devices are integrated into learning environments. Over 80,000 applications are classified as educational and learning base (Apple, 2018). There are very few educational applications in the Albanian language, so this application and educational game will make a small contribution to our education system. It will be an example for teachers and a new resource for students to learn. The mobile phone recently has a huge impact on our society. Prominent areas include social life, business, health and education. Adaptation and use of IT in the education system have a positive impact on teaching, learning and research. It will increase flexibility so that teachers and students have access to learning resources regardless of time and geographical barriers.

Purpose of Study

The purpose of the research study is on analyses, assessment and evaluation of educational games as learning strategy for university students. In order to realize these analyses, several mobile educational games have been developed to be used for student learning process.

Research Methods

The research methodology used is triangulation technique which combines qualitative and quantitative methodology. As research method used quantitative method using questionnaire and focus groups. Hypothesis H1: The use of educational games have a positive impact on improving student knowledge and understanding.

Main research questions are:

- What is the Impact level of Mobile Educational Games on Increasing Students' Attention and Interest in the Learning Process?
- What is the Impact of Mobile Educational Games on Improving Student Success?
- What are the aspect of game adaptation by students and teachers?
- How Mobile Educational Games affect students' motivation and willingness to learn?
- Whether Mobile Educational Games promote competition among students?

Findings and Results

The expected findings and arguments of the work provides sufficient information on the factors that influence the use

of educational games and their impact on the learning process as well as the most impacting factors assessed in the learning process and their alignment with instructional pedagogies.

Conclusions and Recommendations

The research study provides a review of the published literature as well as an analyses of the emerging trends as well as the educational game and its impact on the education process.

Based on the literature review, as the most significant steps toward implementing and developing a successful educational game are the student's involvement and acceptance of the educational game, deciding which of the multiple features should be implemented, in order to assist specific groups and maintain their satisfaction. Also, identifying the optimal requirements and definitions is considered as a major step in order application to be powerful and reliable.

Nowadays children use mobile devices for entertainment purpose, so the main aim of the study is to use this interest and motivation and implement it into the learning process. The study tries to contribute practically by increasing the student motivation and interest of learning, and not wasting their time playing other games, but learning and playing at the same time. This research tries to make a sublime contribution in the field of mobile learning in the education process.

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Use Of The Artificial intelligence (AI) marketing in society

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Abstract: Marketing, more than any other business function, deals with customers. Creating customer value and satisfaction are the heart of modern marketing thinking and practice. Marketing is the delivery of customer satisfaction at a profit. The two-fold goal of marketing is to attract new customers by promising superior value and to keep current customers by delivering satisfaction. With combination of the Artificial intelligence (AI), that is a wideranging branch of computer science concerned with building smart machines capable of performing tasks that typically require human intelligence, represent new wave of the marketing in the society as known as Artificial Intelligence (AI) Marketing. AI-based marketing is the use of machine learning and AI-powered systems to complement strategic decision-making. It is derived analysis and pattern matching insights from large sets of customer and user data (e.g., purchases, web visits, clicks, product usage, etc.). AI systems complete complex calculations and provide recommendations based on what they learn from data, and how they've been taught to process it. The insights are delivered to marketers via dashboards, reports and recommendations. The mechanism of AI Marketing is increasing awareness leading to better social change. When society points to new and better opportunities for progress, it develops new forms to exploit these new changes. The new forms of change are better able to harness the available social energies and skills and resources to use the opportunities to get the intended results.

Keywords - Marketing, Artificial Intelligence, AI, Society, New Wave

Introduction

The evolution of AI Marketing through big data and advanced analytic solutions have made it possible for marketers to build a clearer picture of their target audiences than ever before; It is derived analysis and pattern matching insights from large sets of customer and user data (e.g., purchases, web visits, clicks, product usage, etc.).

Purpose of Study

Digital marketing is defined by the use of numerous digital tactics, strategies, tools and channels to connect with customers where they spend most of their time - online. There are thousands of tactics and embarrases falling under the cap of digital marketing and can really help you and your customers. However, artificial intelligence marketing is something different that shows solutions whom are truly understand by the world in the same way as a human being. AI Marketing represents platforms that are identifying insightful concepts and themes through huge data sets. The most astonished fact is that solutions who are interpret with emotions and communications like a human. That conclude that these platforms can understand open form content like natural language, social media and email responses.

Research Methods

The research methodology used in this scientific paper will be content analysis combined with qualitative methodology. As research method used analyses of documents as a data source. Hypothesis New wave of AI Marketing introduces challenges that marketers must be aware of automated decisions based on data collection, data analysis, and additional observations of audience or economic trends that may impact marketing efforts. Main research question are: Can we start to understand AI Marketing as a tomorrow's technology? What are the major challenges and efforts of the AI Marketing? Does system of marketing process in modern industry is becoming increasingly dependent upon automation technology?

Findings and Results

The expected findings and arguments of the work will provide sufficient information on sources of Artificial Intelligence Marketing and to whom to address the new wave of AI Marketing, especially to scientific workers and marketers to understand this use of the data and these technologies that provide to enhance, not replace, their human understanding.

Conclusions and Recommendations

The research study provides an analysis of the artificial intelligence marketing and shows how this new wave of marketing can improve business of the world companies. AI Marketing leverages this technology to do mass advertising and generate sales for known brands (aggregators). These known brands Google, Apple, Amazon, Facebook, Uber...) pay commissions (up to 60% for certain products) in the form of cashback to AI Marketing. s every tasks gets more and more automated, artificial intelligence has slowly taken its place in apps we use daily. The whole process start in 1950s with Alan Turing, an English computer scientist, who tested a human evaluator's ability to distinguish between responses from both another human and a machine programmed to generate human-like responses. His paper "Computing Machinery and Intelligence" (1950), and its subsequent Turing Test, established the fundamental goal and vision of artificial intelligence. Today follows with something that have big impact to whole society. As machines continue to gain the ability to learn and make decisions independently, the

uses of AI will grow, spurring exponential application for marketers.

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Analyses of Digitalization Transformation and Digital Skills of Public Administration

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Abstract: The purpose of the research study is analyses and assessment of the Digitalization Transformation and Digital Skills of Public Administration. Every administrator is meant to have a certain level of proficiency in digital skills. However, the current education system has fallen short of providing our future generations with the basic understanding of what it takes to succeed in a digital environment. The goal of this paper is to assess the digitalization process and digital skills and competencies of administration and define the digital transformation and realize a review, and synthesis of opportunities for future research. There is a gap in published research regarding current Digitalization Transformation level and what are the required Digital Skills for Public Administration. The research aims to approach the analysis of the emerging trends in Digitalization Transformation and Digital Skills of Public Administration and the digital skills analyses and comparison using qualitative method and questionnaire as well as two focus groups. The research methodology used is triangulation technique which combines qualitative and quantitative methodology. The issues, findings as well as recommendations are discussed and argued.

Keywords: Digital Skills, Assessment, Public administration proficiency, digital competences, curricula

Introduction

The process of digitization of public administration is part of the European strategy aimed at improving access to goods and services throughout Europe for both citizens and companies, but also the potential of ICT technologies to promote innovation, sustainability, growth economic and progress. Thanks to the promotion of digital citizenship and the implementation of an open government model, digital technology offers innumerable possibilities both for the organization of administrations and for relations between citizens, companies and administrations. An efficient and innovative public administration must guarantee fast services and high quality to citizens. This means rethinking and digitally redefining procedures and services and giving other administrations and, if possible, civil society free access to data and services. Several administrations are already using contract registries and have digitized bidding procedures. The use of electronic signatures, the digital disclosure of documents and information or electronic invoicing (both in the public and private sectors) are no longer news. Today citizens can actively participate in the life of society through online tools, and represents the digital transformation of citizenship. Given the importance of this topic, it is necessary to educate people about digital.

Literature Review

The digitalization of public administration is increasingly moving forward. This systematic literature review analyzes empirical studies that explore the impacts of digitalization projects (n=93) in the public sector. Bibliometric ally, only a few authors have published several times on this topic so far. Most studies focusing on impact come from the US or China, and are related to Computer Science. In terms of content, the majority of examined articles studies services to citizens, and therefore consider them when measuring impact. A classification of the investigated effects by dimensions of public value shows that the analysis of utilitarian-instrumental values, such as efficiency or performance, is prevalent. More interdisciplinary cooperation is needed to research the impact of digitalization in the public sector. The different dimensions of impact should be linked more closely. In addition, research should focus more on the effects of digitalization within administration.

Digital skills generally refer to the ability to use digital devices, software, applications, and networks to manage information (Critical Digital Skills for Employment and Social Inclusion, 2018). Acquiring "digital literacy" means the ability to create and share digital content, communicate, and solve problems using digital technology. Digital skills range from basic to highly specialized. For example, jobs always require a minimum of operational skills (using a computer) and formal skills (understanding technology features like opening websites, hyperlinks, etc.).

Purpose of Study

The purpose of the research study is the analyses and assessment of the emerging trends of Digitalization Transformation and Digital Skills of Public Administration. We are using qualitative method and questionnaire as well as two focus groups.

Research Methods

The research methodology used is triangulation technique which combines qualitative and quantitative methodology. As research method used quantitative method using questionnaire and focus groups.

Hypothesis H1: The proper Digitalization Transformation and High level of Digital Skills of Public Administration can

increase their efficiency and efficacy.

Main research questions are: What are the main emerging digital skills for public administration? What are the main shortcomings of public administration currently? How can we improve their digital skills? What are the basic skills and what are the expert skills required for public administration? What are the major challenges in public administration?

Findings and Results

The expected findings and arguments of the work provides sufficient information on the factors that influence the digitalization transformation and different digital skills and assessment of the different requirements from different public administrations.

Conclusions and Recommendations

The research study provides a review of the published literature as well as an analysis of the emerging trends of different Digitalization Transformation and Digital Skills of Public Administration.

The impact on Digital Skills and Competencies has been analyzed, and insights and results have been provided. Our method shows that finding out whether different ways of participating in this assessment can lead to the realization of Competencies is novel.

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Analyses Of the Top Digital Skills that Technological Companies are Looking for Employment

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Abstract: The purpose of the research study is analyses and assessment of the Top Digital Skills that Technological Companies are Looking for Employment. This research study finds that the impact of innovation on demand for skills is very dependent on the type of innovation and the context. Lack of Skills Threatens Digital Transformation. However, there is a gap in published research regarding current Top Digital Skills that Technological Companies are Looking for Employment. The research aims to approach the analysis of the emerging trends in Digital Skills that Technological Companies are Looking for Employment and the digital skills analyses and comparison using qualitative method and questionnaire as well as two focus groups. The research methodology used is triangulation technique which combines qualitative and quantitative methodology. The issues, findings as well as recommendations are discussed and argued.

Keywords: digital skills, employment skills, online education technologies, digital online education, curricula

Introduction

All companies, organizations and industry in general in the current digital economy recognize that digital skills are essential for employees in the digital age. It is more important than ever that new hires are interdisciplinary and have both hard and soft skills. Regardless of the specific position you're applying for, recruiters look to a broader range of skills and experience in their new hire.

While soft skills relate to how we work together, technical skills relate to what we are working on. With the rapid rate of digitization, technical skills such as digital skills and data analytics have gained in importance. It's also important to note that skill requirements will only continue to change as the digital landscape continues to evolve. Arming yourself with basic digital skills and continually educating yourself to keep up with the latest developments is essential.

Technology companies, and indeed all organizations in the digital economy, recognize that digital skills are essential for employees in the digital age. It is more important than ever that new hires are interdisciplinary and have both hard and soft skills. Regardless of the specific position you are applying for, recruiters look to a broader range of skills and experience in their new hire. An estimated 1 million tech jobs went unfilled in 2020, suggesting a huge tech talent shortfall in the U.S. Additionally, in a Udem survey, more than 50% of corporate learning and development leaders said that technical skills were his top priority for education in 2020. 2021 marks a new decade of the fourth industrial revolution. As automation and technology become increasingly integrated into our careers, the digital divide in our society is growing (van Dijk & van Deursen, 2014). Although access to digital media is widespread, the skills gap is also widening. Current research shows that 90% of professional careers require at least basic digital skills. Meanwhile, specialized skills are even more in demand in larger organizations.

So what can we do to adapt to the rapid digital revolution in the job market? In order not to be left behind, new workers must incorporate technology into the skills they offer.

Therefore, in this study, we analyze and address the basic digital skills that are required to be successful in the job market that lies ahead. With rapid digitization, technical skills like digital skills and data analytics are becoming more and more important. And with the further development of the digital landscape, qualification requirements will also increase.

Therefore, it is crucial to have basic digital skills and continuing education to keep up with the latest developments.

Regardless of the industry, there are the most common technical skills employers look for and analyses on how to acquire them. First, the study discuss what digital skills really are and what types of tech skills exist. Then we'll outline the 10 most in-demand digital skills in 2022 and how you can obtain them.

Literature Review

Digital skills generally refer to the ability to use digital devices, software, applications, and networks to manage information (Critical Digital Skills for Employment and Social Inclusion, 2018). Acquiring "digital literacy" means the ability to create and share digital content, communicate, and solve problems using digital technology. Consequently, in today's world, at least entry-level digital skills are considered crucial to securing a career. That is why independent development of digital skills is important. As new sources of digital technology are constantly expanding, the basic training often remains the same. So our job is to keep up with the latest job market demands.

Digital skills range from basic to highly specialized. For example, jobs always require a minimum of operational skills

(using a computer) and formal skills (understanding technology features like opening websites, hyperlinks, etc.). In this article, however, we will focus on the higher digital skills that are essential for service jobs. This includes information skills, for example: searching and analyzing information from digital media. At the same time, communication skills are also crucial: interacting digitally with web applications. Additionally, employers are looking for content creation skills at even higher levels - textual, quantitative, or animated digital content creation. After all, strategic skills are particularly important to companies. It refers to the ability to use digital media for a professional purpose. What are some real world examples of these skills? Let's take a look at our list of the 10 most in-demand digital skills for the coming year! In the highly digitized world of work of the 21st century, knowledge of software operation is of crucial importance, knowledge of basic operational skills for the most common work software is definitely an important factor. The biggest challenge for the 999 top executives surveyed (71% from the US and 29% from Canada), whose companies have more than 1,000 employees, is "rapid technological development and a shortage of skilled workers." and medical care. There is no denying that technology will play an important role in future work, and 50% of companies expect their workforce to grow to embrace the new technology. 53% of respondents plan to adopt cognitive technologies such as AI, machine learning and natural language processing in the next two years, so it is not surprising that 80% of organizations agree that they need more people with technical skills.

Cedefop's European skills and jobs (ESJ) [3] survey reveals that more than 7 in 10 adult employees in the EU need at least some fundamental ICT level to be able to perform their jobs. Yet, about one in three of those employees are at risk of digital skill gaps. At the same time, almost half of all employees in low-skilled occupations do not require ICT skills to do their work.

According to [4] the top skills today's employers are looking for in candidates include:

- Listening skills (74 percent)
- Attention to detail and attentiveness (70 percent)
- Effective Communication (69 percent)
- Critical thinking (67 percent)
- Interpersonal skills (65 percent)
- Active learning/Learning new skills (65 percent)

However, the majority of employers (73 percent) said it was very or somewhat difficult finding qualified candidates, and about one-third (34 percent) say schools have not properly prepared students for jobs.

"These results show that we must not underestimate the power of the people factor in the workforce. Technology and automation will continue to change and replace jobs, but there are skills that cannot be automated, such as the ability to think critically or problem solve," said Michael Hansen, CEO of Cengage.

Purpose of Study

The purpose of the research study is the analyses and assessment of the emerging trends of Top Digital Skills that Technological Companies are Looking for Employment and what is the impact on university teaching curricula. We are using qualitative method and questionnaire as well as two focus groups.

Research Methods

The research methodology used is triangulation technique which combines qualitative and quantitative methodology. As research method used quantitative method using questionnaire and focus groups.

Hypothesis H1: The proper inclusion of Digital Skills that Technological Companies are Looking for employment into teaching curricula can increase the Faculty and University quality and attractiveness.

Main research questions are: What are the main emerging digital skills? What are the main emerging trends for digital skills? How can we improve the digital skills? What are the basic skills and what are the expert skills required? What are the major challenges in employment of companies?

Findings and Results

The expected findings and arguments of the work provides sufficient information on the factors that influence the different digital skills and assessment of the different requirements from different companies.

Conclusions and Recommendations

The research study provides a review of the published literature as well as an analyses of the emerging trends of different Top Digital Skills that Technological Companies are Looking for Employment and analyses how it did impacted University study curricula's?

The educational system must have a high level of basic skills in language, natural sciences, mathematics and computer science. "We understand by high basic skills as the vast majority of school graduates who achieve at least an intermediate degree in these areas.

These core platform competencies are essential for future employees to further develop their job skills. "

Companies or the entire country can no longer rely heavily on small elites of highly skilled or well-educated people. Instead, innovation must be both organizational and technological in nature, and involve people in production, as well

as in R&D, marketing and management positions.

It follows that one of the most pressing problems is that all its residents must have a good general education if the UK is to continue to have a dynamic innovative economy. This should provide the recipient with a platform of general skills that will prove useful in adapting to changing circumstances that will undoubtedly apply within and across industries and businesses. That means they will be able to better adapt to the effects of innovations in their own company and better enter the job market, even move to other areas, if they are laid off. Software Developers & Engineers in Strong Demand.

The study suggests that a degree in academic education coupled with vocational training increases an individual's ability to learn and adapt. Again, innovation is likely to require an increasingly adaptable workforce with a wide range of skills. Despite current state interventions in this area, the range of skills appears to be less than what would be socially optimal. Therefore, a new way of distributing costs and benefits between employers, workers and government may be necessary to promote better skills education.

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Comparison Techniques between Natural and Artificial Dyes. Anthotype Printing

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Abstract: The dyes either natural from tea or artificial dyes which are commercially available are widely used in textile colouring. The colouring process includes extraction of the certain dye or pigment in the amount of 5 g to be dissolved in hot water (90 °C). Amount of sodium chloride was added to boiling water for colouring natural materials such as wool and cotton. The main goal of this research is to replace the artificial colours with the natural ones and to find a key solution how the colour can be fixed without fading over washing and over the time. The fixation of the colour was carried out using egg yolk in acidic medium using liposomes as vehicles. The sustainability of the renewable materials with natural origin is in progress to be found in the textile industry. Moreover, the anthotype printing including turmeric spice with acidic boric (10%) development allows an ecofriendly approach in the terms of photography where students can develop their own photos with routine procedure.

Keywords: dyes, fixation, anthotype, cotton, wool

Introduction

Natural colours are considered to be ecofriendly, but with poor bonding properties in the connection with textile fiber materials. In this study, anthotype technique was used in the photography in the means the process to be more ecofriendly and in order the students to have their own chance besides of creating models to make photographs as well in their session. The natural dyes have properties to be not hazard, without toxicity with high level of sustainability and with the origin from natural renewable sources.¹ In the literature, the classification of the dyes according to the origin can be divided as from animal, plant, and mineral origin. The process of colouring is applicable on natural fibers cotton, wool, silk, linen.¹ The colourants contain certain group which is chromophoric or auxochromic and the colour itself depends on that group in the colourant. For example, tannins are complex polymeric polyphenols containing aromatic ring structure.²⁻⁴ The aqueous extraction method is used in terms of separation non-dye material. One of the main disadvantages is the colour breaking and the proper temperature for wool and silk should not exceed 90 °C. The role of adding salt in the dye bath is to form at the highest possible level of colouring. The fixation and finishing can be done with the use of liposomes.¹ The use of natural colours somehow can be a challenge in the fixation of the colour which can be faded over the time. The photography nowadays uses techniques from the period from many years ago such as anthotype printing and cyanotype technique.⁵

Purpose of Study

The purpose of this research is to make a comparison using different techniques implementing natural and artificial dyes. The cycle of washing and the choice of the material if it from natural or artificial origin is, play role of the colour fading. Moreover, the anthotype of printing is old technique which can be used in the study program of textile, design and modeling as a technique for self standing students to make their own photos with the use of less toxic substances.

Research Methods-Materials

Samples of tea in form of bag such as from forest fruits, *Hibiscus*, *Tilia*, artificial red colour, turmeric spice, eggs, and vinegar were bought from the local market. Boric acid, sodium chloride, and ethanol (96%) were bought from Alkaloid AD (Republic of North Macedonia). All reagents were with analytical purity. Cotton and wool were bought as raw materials from the local market. An analytical balance on analytical balance (VWR LA 124, Austria) with 0.1 mg accuracy was used in the analysis.

Material burning. In order to test the purchased fiber sample if it is natural or artificial, burning test was performed in order to make a difference based on the smell and the formed product.

Each tea samples ($25 \text{ g} \pm 0.0001 \text{ g}$) were weighted and transferred to laboratory beakers and on the hot plate, in the period of 30 min all samples of tea were boiled in distilled water (200 mL). The artificial colour was used in the amount of $5 \text{ g} \pm 0.0001 \text{ g}$. In all experiments, sodium chloride salt was added. After the period of 30 min, a piece of textile, cotton or wool was placed in the beaker and mixed well with the colour. The dyeing is carried out in acidic medium and the vinegar can be used in order to improve fastness of dyed samples. The washing process is repeated in the following 7 days and the drying in the sun light.

Anthotype Printing. The image which is created with the use of photosensitive material from plants is called anthotype.

In this study turmeric spice was used in the amount of $5 \text{ g} \pm 0.0001 \text{ g}$ and was placed in the laboratory glass beaker where 20 mL of 96% ethanol was added. A white piece of paper used for the art purposes was placed where the mixture was poured through the whole paper. The paper should be saturated well followed the drying process until the yellow colour was formed. The picture which was intended to be developed should be previously printed on transparent paper and then placed it gently on the prepared piece of ethanolic turmeric paper. The material was placed in the picture frame exposing on the sunlight 5 h. The image was developed in water boric acid solution (10%) and finally the yellow-brownish colour was formed.

Findings and Results

The natural materials burn in the flame where only ash was left and without plastic smell. The dyeing process was successfully applied on the cotton and wool material. The obtained colour was along with the expected one in terms which kind of dye was included in the experiment. The fixation of the colour was done using liposomes where egg yolk was mixed with the colour of interest. If the anothotype paper after developing is kept in dry condition and without direct sun lighting, it can last long time. The students can make their own photographs with anothotype technique and put their own seal on their work.

Conclusions and Recommendations

The colours either herbal with natural origin or artificial colours can be used in the textile industry. The liposomes can be used as auxiliaries in process of dyeing in textile. The obtained colour is more resistant to wet treatment and oxidation. The ecofriendly anothotype printing can be successfully applied in the photography.

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Using different chemical methods for the analysis of *Helichrysum arenarium* L.

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Abstract: *Helichrysum arenarium* L. is widely known as an eternal, immortal flower or faded flower belongs to the family Asteraceae. *Helichrysum arenarium* has been used for a long time for its healing properties in medicine. In different places, the flowers and leaves of this plant are used to treat various ailments such as allergy irritations, colds, coughs, skin rashes, inflammation, infections and insomnia, kidneys stones, urogenital disorders, stomach pain, jaundice, diarrhea, asthma, gallbladder and stomach disorders, cystitis and arthritis.

Traditional uses of *Helichrysum* have highlighted many potential applications for extracts and compounds isolated from this plant. In this study we used different chemical methods for analysis of *Helichrysum arenarium* such as steam distillation to obtain the extracted oil from the plant followed the analysis with liquid-liquid extraction using 3 x 5 mL dichloromethane where sodium sulphate was used as a drying agent and the obtained oil was 0.1%. The obtained oil was examined with TLC where the trial was with two mobile phases, ethanol:acetic acid:water (2:1:5, v/v/v) and methylene chloride:acetone:acetic acid (15:2:3:1, v/v/v). R_f values can be determined with the use of standards because a complex mixture of compounds was obtained.

Helichrysum is a medicinal plant with promising pharmacological activity. However, further scientific analysis is needed to confirm the various applications of this plant and to promote *Helichrysum arenarium* as an important tool for the treatment of various diseases.

Key words: *Helichrysum arenarium*, plant, extracted oil, steam distillation, extraction

Introduction

Helichrysum arenarium is a herbaceous perennial plant belonging to the Asteraceae family which consists of about 500 species and mainly it is known as everlasting, immortal flower or fadeless flower. *Helichrysum arenarium* is broadly distributed in different areas, in Europe, the Northern Balkans, West Siberia, Central Asia, Mongolia and China. The height of this plant goes from 15–40 cm, this shrub is widespread in slightly acidic or neutral, and absent in alkaline soils. The flowering period of the plant is from June to September. The colour of *H. arenarium* can vary from yellow to reddish-orange or even orange-brown [1–3]. The origin of the genus name is derived from the Greek words *helios*, meaning sun, and *chrysos*, meaning gold, what refers to the shiny-golden colour of inflorescence [5]. The most studied species of this genus in recent time are *Helichrysum arenarium* (L.) Moench, *Heli-chrysumstoechas* (L.) Moench, *Helichrysum graveolens*, and *Helichrysum italicum* (Roth) G. Don [2].

Inflorescences of the plant (*Helichrysi flos*), being rich in flavonoids, essential oils, fatty acids, carotenoids, steroids, bitter substances, polyphenols, vitamins and mineral salts [1,3–5,7], while other compounds present in and yellow pigments: α -pyron derivatives such as arenol and homoarenol [5]. The interest in plant *Helichrysum* has been motivated by the traditional therapeutic applications: *Helichrysum arenarium* inflorescences have been used as herbal medicine for its antiseptic, choleric, spasmolytic, cholagogue, diuretic, anti-inflammatory, hepatoprotective, digestive, detoxifying, antimicrobial, antioxidant, radical scavenging, etc. properties [1,2,6]. *Helichrysum arenarium* can be used also for coughs and colds, tea is prepared or the leaves are boiled in milk [3,7]. Since these plants are used for different health ailments by local traditional medicine, it was considered interest to determine the accurate (quantitative) composition of their phenolic profile, composed mainly of caffeoylquinic acids isomers [6]. Most of the *Helichrysum* species have been studied for their essential oils or extracts, which possess potent pharmacological properties [4]. All the phenolic classes have received considerable attention because of their physiological functions, including free radical scavenging, antioxidants and antimicrobial activity [3]. Dried plants are used as a repellent against brown house moths. The inflorescence oil was formed mainly by aliphatic acids (34.6%), esters (28.5%) and further aromatic compounds (10.2%), in addition to other volatile components typical for *Helichrysum* Genus [4].

Natural matrices represent a rich source of biologically active compounds and are an example of molecular diversity, with recognized potential for the development of cosmetics or cosmeceuticals. Moreover, the antioxidant potential of

extracts of this plant could also support the development of cosmetic/cosmeceutical products, similarly to some documented examples dealing with the encapsulation of various plant extracts and isolated compounds [7]. The aim of this study was to calculate the yield of the extracted oil that was obtained with chemical methods and the evaluation of the oil.

Purpose of Study

The purpose of this research was using of different chemical methods for obtaining oil from the plant of *H. arenarium* and investigation of the oil.

Research Methods-Materials

The plant of *Helichrysum arenarium* (Figure 1) and the package of *Helichrysum arenarium* crystals as using as a standard were bought from the grocery store for health nutrition.



Figure 1. Photography of *Helichrysum arenarium* (L.) bought from the grocery store for health nutrition

Dichloromethane (99.8%), acetic acid, and acetone were from Fluka (Switzerland) while methanol, ethanol (70%) and sodium sulfate were purchased from Alkaloid AD (Republic of North Macedonia). All reagents were with analytical purity. An analytical balance (VWR LA 124, Austria) with 0.1 mg accuracy was used in the analysis.

Steam Distillation-It was weighted $10\text{ g} \pm 0.0001\text{ g}$ from the aerial parts, stems and leaves of *H. arenarium* L. and transferred to round-bottom flask and on the hot plate, in the period of 3 hour and 30 minutes the sample of the *H. arenarium* L. was boiled in 200 mL distilled water. The essential oil of aerial parts, stems and leaves of the *H. arenarium* L. was distilled with water steam distillation according to the method of British Pharmacopoeia [8].

Liquid-Liquid extraction-The obtained oil from the steam distillation (7 mL) was extracted using a liquid-liquid extraction with (3 x 5 mL) dichlormethane (99.8%) in separatory funnel. The extracted essential oil was dried with anhydrous sodium sulphate and stored in the sterilized vial at 4 °C until use.

Thin-Layer chromatography-The analysis of the extracted oil was carried out using thin-layer chromatography (TLC). The samples of one grain were dissolved in 1 mL methanol for the first and the second mobile phase. The Merck pre-coated silica gel plates 5 x 10 cm (60 F₂₅₄, 200 µm) was used in the TLC analysis. A comparison study trial with two types of mobile phase solvent systems were applied to analysis, the first was consisted of ethanol, acetic acid and water (2:1:5 v/v/v), while the second one was consisted of methylene chloride, acetone and acetic acid (15.2:3:1 v/v/v).

Findings and Results

In this study, total extract yield from steam distillation and liquid-liquid extraction were determined. In the period of 3 hour and 30 minutes is expected the main content from the aerial parts, stems and leaves of *H. arenarium* L. to go through the round-bottom flask where hot water is present. The distilled oil was 7 mL and the time-consuming was not too long. The distilled oil had the characteristic bright yellow color.

The yield of extracted oil from liquid-liquid extraction was 0.1% after it was dried with anhydrous sodium sulphate and stored in the sterilized vial at 4°C until use. The dissolved extract was applied in TLC plates for analysis. The TLC chromatograms were shown in Figure 2.



Figure 3. Developed TLC plates in two different mobile phase, the first type (ethanol: acetic acid: water, 2:1:5 v/v/v)) and the second type (methylene chloride:acetone:acetic acid, 15:2:3 :1 v/v).

From the results obtained with TLC we can say that for the determination of R_f values in trial of both types of mobile phases it very complicated because there are divided many components.

Conclusions and Recommendations

The results of this study revealed that with the use of different chemical methods it can be obtained in considerable amount of essential oil. Therefore, essential oil of *H. arenarium* (L.) might be used as a therapeutic agent and these compounds can be applied to medicinal and pharmaceutical purposes. However, future researches are necessary to understand the involved mechanisms. Further studies should be carried out for the evaluation of the extracts, isolation and identification of individual phenolic compounds, as well.

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Enzyme activity of superoxide peroxidase at barley sprouts

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Abstract: Sprouts are superfoods rich in living substances such as enzymes that help and support the processes of breaking down and eliminating free radicals. It is well known that free radicals have a destructive effect on cells, hence the reasons for finding ways to reduce them. The aim was to determine the day when the germinated barley seeds should be consumed in relation to the starch content and the highest activity of SOD. The research included 15 commercial barley samples purchased at health food stores. Seeds were sterilized with 1% (v/v) sodium hypochlorite for 8 min., rinsed with sterile water, and leaved for 12h to imbibe water at 22°C. Barley seeds were germinated in sterile Petri dishes covered with filter paper (Whatman Grade number 2) for 5 days at 22°C in darkness, afterwards the germinating seeds were watered with 20 mL of distilled water per day. Healthy sprouts were collected, dried, and powdered by using a small laboratory mill. Superoxide dismutase (SOD) was assayed using hydrogen peroxide H_2O_2 test stripes. Measurement of total starch are performed by using AOAC Method 996.11. The obtained results indicate relatively small differences from the 5th to the 7th day in terms of consumption of starch as a reserve substance. The correlation between the consumption of starch in the germination process and the activity of SOD is negative and XXXXX on the 6th day. However, the activity of SOD is greatest on the 7th day after the germination of barley seeds, so it is recommended to consume the 7th day when the antioxidant effect on free radicals is strongest.

Keywords—barley, sprouts, superoxide dismutase (SOD), starch, consumption

Introduction

Superoxide peroxidase (SOD) is an enzyme that is resistant to heat and pepsin in the digestive tract and is easily proven, and can be proven qualitatively with rapid tests. SOD is concentrated in the chloroplast, cytosol and in the extracellular space. SOD is necessary because superoxide reacts with sensitive cellular compounds. Barley sprouts are rich in nutrients, vitamins and minerals, and by consuming they reduce the feeling of hunger and help in the diet regimens for weight loss. They are rich in fiber which, as prebiotics for the intestinal flora, is an excellent food and helps digestion. Sprouted barley seeds increase nutrient absorption (Singh et al., 2015), and germination increases the amount of antioxidant enzymes (Chavan and Kadam, 1989). There are literature data linking storage ability to superoxide peroxidase activity (Tang et al., 2019). SOD even plays a role in protecting genome integrity during aging in *S. cerevisiae* (Stathopoulos et al., 2006). Although the relationship between the content of stored starch and the antioxidant activity of SOD is still unclear (Yi et al., 2017), researches are still being forced to define storage conditions, as well as to determine the moment of consumption of germinated seeds in terms of preserved a certain amount of starch (Barry et al., 2019) and optimal activity of SOD as prevention of reactive oxygen species (ROS), particularly H_2O_2 and O_2^- accumulation (Raseetha et al., 2013).

Purpose of Study

The purpose of the conducted research was to determine the day of consumption of germinated barley seeds from the day of germination, and intended as a dietary supplement and in certain dietary regimes. The evaluation was made in relation to the starch content and the color of the test stripes for SOD activity.

Research Methods

Superoxide dismutase (SOD) was assayed using hydrogen peroxide H_2O_2 test stripes, low level 0-100 ppm which are calibrated at 0, 1, 3, 10, 50 and 100 ppm. The higher the concentration, the stronger the blue color. Total starch content (% w/w) is determined by using AOAC Method 996.11 (McCleary et al., 1994, mean \pm SD, CV %). The amount of starch is determined from the 3rd to the 7th day of seed soaking in relation to the calibrated test strips. Statistical analysis was performed on an average sample ($n = 3$), and the average value, variation and correlation between the amount of starch and the activity of SOD were determined.

Findings and Results

The starch content varies according to the use as a reserve material for the germination of barley seeds (MacGregor and Balance, 1984; Pérez and Bertoft, 2010; Singh et al., 2015). Even during the same day, this component of the seed endosperm changes and decreases as the days of seed germination grow (Giovannoni, 2004; BeMiller, 2007). On the 5th day of placement, the starch content ranges from 39.9% to 51.2%; Variations are even higher on the 6th day when the average value ranges from 31.9% to 44.1%, and slightly higher than on the 5th day are the values for starch found

on the 7th day from 25.1% to 36.6%. According to the literature (McCleary et al., 2019) the higher the starch content, the stronger the antioxidant activity of the enzyme SOD. Our results obtained with qualitative blue staining of test stripes, and calibrated at 0, 1, 3, 10, 50 and 100 ppm on the 5th day show the strongest staining during SOD activity of 3 ppm, and at least at 1 ppm. On the 6th day most of the samples show blue staining at 10 ppm, and slightly less at high activity of SOD or 50 ppm, while on the 7th day the highest activity of the tested enzyme was observed at 50 ppm, and slightly less at 100 ppm.

By increasing the number of days of germination and growth of sprouts, the starch reserve decreases, and thus the activity of SOD. The correlation between these two parameters is therefore negative and is strongest on the 6th day - 0.606, on the 5th day weaker -0.502, and decreases drastically and on the 7th day is -0.471 (Figure 1). Hence, the obtained results give a significant contribution to the evaluation of the activity of the SOD enzyme which increases its antioxidant capacity depending on the days of storage of products or their starch reserves, and increased consumption reduces its potential.

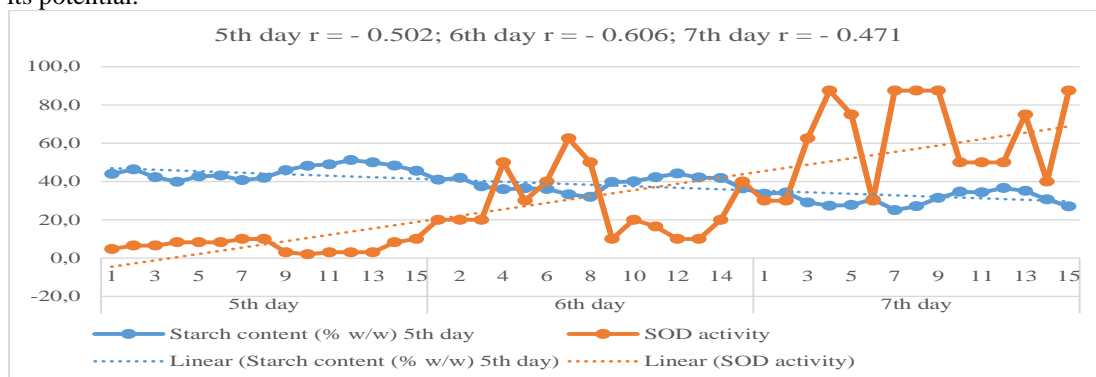


Figure 1. Correlation between the starch content (% w/w) and SOD activity at barley sprouts (5-7 days of germination)

Conclusions and Recommendations

The research results point very clearly at increased SOD enzyme activity at 7th day aged barley sprouts which means the greatest antioxidant potential and suppression of free radicals during their consumption. The SOD activity depends on the amount of reserve substances such as starch and the most suitable and recommended time for intake in the diet is the period from the 5th to the 7th day, with the strongest note that the antioxidant activity is observed on the 7th day of barley seed germination.

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Defamatory Albanian portals during the Covid period and the spread of fake news

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Abstract: The coronavirus pandemic is characterized by impacts and changes in all social spheres. It is a period of forced isolation, in which people were enforced to stay at home in order to protect their health. Hence, the need of intensifying contact with various media increased by itself. Television and the internet became inalienable psychological resources: for information, comfort and entertainment. Many people took advantage of this period and through the easy opportunities that the internet provides, created websites and social profiles, supposedly informative, but with the goal of clicks and material gaining. Without revealing their identities and without any censorship or sanctioning control from outside, they constantly 'bombarded' with all sorts of bombastic headlines, behind which various misinformation was hidden. The role of all these portals has been without exception negative, evoking grief, fear and insecurity and making the overall situation increasingly confusing and this way harmed the society. There have been no reports of any government intervention in the region against these portals. This chaotic and diffuse situation on the Internet should serve to raise the alarm and raise increased attention, so that appropriate legal measures are taken against this phenomenon.

Keywords: defamatory portals, fake news, manipulation, panic, insecurity, Covid pandemic

Introduction

News circulation has changed, while in the past it was edited by professionals, now days it is edited by everyone. Thus leading "fake news" circulation that in turn causes tension and misunderstanding in times of pandemic. Amid the COVID-19 pandemic, online fake news poses threat to public health communication as more people depend on the internet to get health-related information.

Purpose of Study

This study's objective is to describe the characteristics of fake news about COVID-19 that circulated in the Albanian media. It aims to provide in-depth insights about COVID-19 related fake news that will help academics and policymakers understand fake news and control them.

Research Methods

This is a qualitative research study based on the existing literature review and media analysis. Fake news disseminated in Albanian language media were collected and qualitatively analyzed.

Findings and Results

Three main themes appear in regard to fake news in Albanian media, conspiracy theories, poor journalism and medical related misinformation. Some of the widespread conspiracy theories were that billionaire philanthropists have planned the pandemic in order to slow the growth of worlds population; planes release chemical substances that spread the virus; CoVID-19 is connected to 5G mobile networks. Most of the fake news are a product of poor journalism, such as publishing unverified content and giving space to un credible sources to give medical advices. The last theme is related to health issues such as antivaccine and medical advice fake news.

Conclusions and Recommendations

The pandemic of covid 19 found the governments of the world unprepared in all fields. During the pandemic almost nothing was done to prevent and deter misinformation about the coronavirus. All the misinformation widespread during the coronavirus pandemic, has further aggravated the psycho-emotional state of people. Throughout the period of the pandemic which is still going on, there have been and are constantly misleading, misinforming and discouraging videos, which add anxiety, panic and aggravate the general psycho-emotional state. Prevention is better than cure. This truth, as important as it is for the spread of disease, carries the same weight with regard to the dissemination of false news. Health institutions should make constant calls to convince citizens not to fall prey of misinformation from social networks, which is published without any scientific competence on a medical issue. Governments should plan and invest in tools for identifying misinformation and improving online accountability in order to combat the spread of fake news. Media literacy should be prioritized so that people become educated media consumers that will learn to follow authentic news. Competent promotion of accurate and reliable data that create sound convictions about everything related to maintaining health, safe behavior and preventing infection and its spread. Social media platforms should be monitored and they should make sure to provide official page links at times people search for Coronavirus, Covid-19, and/or pandemic.

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TLC screening of active compounds of orange peel oil extracted with different methods

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Abstract: Essential oils are mixture of compounds characterized with antioxidative, antibacterial and antiinflammatory properties. Each citrus fruit has properties based on many compounds in the oil as flavonoids, terpenes, aldehydes and ketones. After consumption of edible parts of the fruit, orange peels are often discarded as waste. Essential oil extracted from these peels can be used in food industry, cosmetics and pharmaceuticals. Used methods for this purpose were cold pressing and hydrodistillation. Essential oil obtained with these methods together with commercially available orange oil were analyzed with TLC (thin-layer chromatography) method. Two mobile phases were used A: a mixture of toluene:ethyl acetate (93:7,v/v) and mobile phase B: dichloromethane:acetone:glacial acetic acid (7.6:1.5:0.5,v/v/v). Main spot of commercial orange oil using mobile phase A had R_f value 0.60 while a common R_f value of 0.38 for hydrodistillation extract and commercial oil was detected with mobile phase B. As plants contain a myriad of active compounds, further identification should be performed with other chromatographic methods.

Keywords: orange peel, essential oil, cold pressing, hydrodistillation, TLC

Introduction

Orange belongs to the family *Rutaceae* and is one of various citrus species (Fedaku *et al.*, 2019). The characteristic aroma is based on the volatile organic compounds while the taste depends on the ratios of sugars and acids. Oranges contain several substances such as phytochemicals, flavonoids, aldehydes, esters, terpenes, alcohols, and ketones (Fedaku *et al.*, 2019; Móricaza *et al.*, 2016). Orange is commonly peeled and eaten fresh or it is used as a drink. In food technology it is used as a food flavor and as marmalade. The orange peel is also edible which contains vitamin C, dietary fiber, minerals and polyphenols. Its oil is mainly used in food technology as additive in ice cream, cakes and drinks and also used in air-fresheners and perfumes. The oil quality depends on the extraction procedure and used solvent (Fedaku *et al.*, 2019; Móricaza *et al.*, 2016).

The study of the content of essential oil in plants has been known since antiquity which was linked with aromas (Bell *et al.*, 2001). The essential oil is found in all parts of the plant but most often in flowers, seed and peel. The oil is complex mixture of several different compounds including alcohols, carbonyl compounds, hydrocarbons and terpenes (Bell *et al.*, 2001). Essential oils are utilized in pharmaceutical industry like soaps, cosmetics, pharmaceuticals, insecticides and in food industry for soft drinks and alcoholic beverages (Fedaku *et al.*, 2019). The most common methods for analyzing essential oils are fractional distillation with reduced pressure, crystallization or chromatography (Bell *et al.*, 2001; Sanghai *et al.*, 2011).

Purpose of Study

The purpose of this research is to develop an extraction method of essential oil from orange peels and screening of main active compounds with TLC method, which is easy to handle and gives rapid results.

Research Methods-Materials

Orange fruits purchased from the local market, were washed and removed the flesh. The fruit mesocarp layer was peeled off carefully and discarded. The epicarp layer was dried in dark at room temperature for 5-7 days. The dried peels were grinded to powder with electrical grinder. For hydrodistillation procedure, 10 g of orange peel powder were transferred into round bottom flask filled with 100 mL distilled water. The experiment was carried out at temperature of 97°C for approximately 3 hours. Extraction of essential oil was performed 3 times with 5 mL methylene chloride. The organic layer was drained in previously measured beaker and dried over anhydrous sodium sulfate, at room temperature. While for cold pressing the epicarp layer of fresh orange fruit was smashed with garlic presser. The liquid was once filtered with sterile gauze to remove the debris and then filtered with Whatman nr.1 filter paper. The filtrate was centrifuged for 10 minutes/15.000 rpm/+4°C to remove solid particles. The oil was extracted with chloroform (3x5mL), dried

over anhydrous sodium sulfate and kept at +4°C until further analysis.

The yield of obtained essential oil from orange peel was calculated with this formula:

$$\text{Yield (\%)} = \frac{\text{the weight of obtained extract (g)}}{\text{the weight of starting material (g)}} * 100\%$$

Essential oil obtained with these two methods was analyzed with TLC method compared to commercially available orange oil purchased from the local market. The TLC method was performed on Merck precoated silica gel plates 5×10 cm (60F₂₅₄, 200 μm). Two mobile phases were used for separation of components of the mixture, the first one (A) was toluene: ethyl acetate (93:7 v/v) and the second one (B) was dichloromethane:acetone:glacial acetic acid (7.6:1.5:0.5 v/v/v). All reagents were with analytical purity.

Findings and Results

The obtained oil was yellow to orange with fresh smell, insoluble in water, while the aroma was tangy with strong characteristic odor. The oil is concentrated containing volatile aroma compounds. In order volatile compounds not to be lost in the analysis, the hydrodistillation provided a temperature below the atmospheric boiling point of the volatile compound (Bell *et al.*, 2001). The yield of cold pressing procedure was 0.04% while with hydrodistillation we could obtain 0.16% essential oil. Using mobile phase A, we could determine a compound with R_f value 0.32 while the commercial orange oil had a mixture of compounds with R_f values 0.10, 0.16, 0.32, 0.60, 0.75 and 0.99. Using mobile phase B, at cold pressing extract we noticed a spot with R_f value 0.88, at hydrodistillate a compound with R_f value 0.38 and at commercial oil we could recognize three compounds with R_f values 0.24, 0.38 and 0.91.

Conclusions and Recommendations

Cold pressing and hydrodistillation are “green techniques” used for essential oil extraction, which can be applied for orange peel too. Obtained essential oil is consisted of active compounds that could be detected with TLC as a simple and rapid method. For identification of biological active compounds, more advanced chromatographic methods are recommended.

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Introduction of traffic light of pedestrian crossing to improve pedestrian safety

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Abstract: Pedestrians have to share the road with vehicles so it is important they take care when crossing the road. As a pedestrian, plan where you will walk and always choose the safest place to cross a road. Signalized pedestrian crossings consist of signal displays, line markings and lighting. Signalized pedestrian crossings give priority to vehicles, and pedestrians are allowed to cross only when the signals halt vehicle traffic on the through road. Signals must be timed to give pedestrians long enough to complete their crossing before the signals change to allow vehicle traffic to start passing through the crossing again. A high volume of pedestrian traffic is needed to justify the delays to road traffic that signalized pedestrian crossings cause. Pedestrian phasing should be considered at all signalized intersections where pedestrians are likely to be present. The increasing of traffic volume at intersections has been arise a problems like road accidents, conflicts and congestions. These problems can be solved by providing an efficient traffic signal control at the intersection for continuous and efficient movement of vehicles through the intersection. Most pedestrian crashes occur while the pedestrian is attempting to cross the road. A range of treatments can help pedestrians to cross safely, including the use of signalized pedestrian crossings. This paper presents the improvement of pedestrian safety by introducing traffic lights at pedestrian crossings. The green signal time should be long enough to allow pedestrians to cross safely. For even greater safety when crossing a pedestrian crossing, it is necessary to introduce a method by pressing buttons.

Keywords: traffic light signals, pedestrian, safety

Organized crime as a threat to sustainable development

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Abstract

Organized crime and corruption are one of the most dangerous phenomena that severely damages the foundations of society. This type of crime is a serious threat to development and functioning of the states leaving behind great economic consequences and also consequences regarding to human rights and freedoms. In the column titled: „*Mafia Infiltration of Business Costing Consumer Millions*” published in The New York Times, it is described the organised crime's penetration of sectors such as construction, delivery, food, and private garbage collection, and showed that such penetration costs consumers hundreds of millions of dollars each year.

The main purpose of this paper is to address the negative effects that organized crime has on society, specifically on sustainable development. This paper also aims to make an overview of the instruments adopted to fight organized crime and corruption through the analysis of the laws adopted in the criminal legislation.

By using the normative method we will analyze laws and instruments adopted as a response to organized crime and corruption. Also, we will use data from various official sources such as State statistical office, courts, financial police and other relevant institutions to analyze the impact that organized crime and corruption has on the development of the country.

Several conclusions can be drawn from the results of this paper. This type of crime has a devastating impact on the development of the states. Also, we conclude that the legislation of the Republic of North Macedonia is not fully harmonized with international conventions. As a result, law enforcement institutions face difficulties in dealing with organized crime and corruption that directly and indirectly affect the development of the country.

Key words: Organized crime, sustainable development, confiscation of the criminal proceeds

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Who's new in social rights? The social security convention between Switzerland and North Macedonia: legal and administrative aspects

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Lausanne, le 08 septembre 2021
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Abstract

This work is a contribution of the convention on social security, including Switzerland and North Macedonia, to social security. The subject analyzes the current state of legislation related to social security at two-tier levels (Switzerland and North Macedonia). By proposing several reflection tracks in respect, in a duplex context (s), the rights and obligations of swissers and Macedonian reservoirs by both contracting parties. In general, the social security convention is ported to several contingencies, including savings, family insurance, survivors, disability, illness, professional and non-professional accident and family allocations. In addition, the analysis focuses on survival and disability insurance (AVS / AI) and covers the following issues: application fields, quotations, retirement age, and family allocations. Consequently, an approach to coordination of social security systems through the major principles of coordination: processing equity, applicable legislation, exportation, totalization. The accent sera also misses the detection of trawlers as an exception. The intervention of the liaison bodies of the Statute competent above the secondary Statute is treated in the optics of the principle of administrative management.

Keywords: Convention-State-Security -Social -Droit - Legislation -Switzerland-North Macedonia- Assurance of citizenship-Principles-Salary
Keywords: Convention-State-Security-Social-Law-Legislation-Switzerland-North Macedonia-Old-age insurance-Principles-Employees

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Dry aged beef challenges for manufacturers and consumers

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Dry aged beef is becoming increasingly popular and comprises a rather heterogeneous product group of dry beef that has matured over several weeks to months. The transitions between traditionally hung meat and dry aged meat are fluid. Studies have shown that this can very well be hygienically risky food that can be contaminated with pathogenic microorganisms, toxins and biogenic amines. 123. From a legal point of view, it is therefore important to assess whether it is a safe food within the meaning of Art. 14 Regulation (EC) 178/2002, as sensory characteristics of "spoilage" have been determined, especially in meat that has been matured for a long time. 2 It is discussed whether dry aged beef should be regarded as "fresh meat" or already as "meat preparation". This assignment in turn influences the food safety and process hygiene criteria to be complied with in accordance with Regulation (EC) No. 2073/2005. Dry aged is currently not a protected term and cannot be classified as a new type of food according to VO (EG) 258/97. 4. In summary, it can be said that due to the inhomogeneous product group and a currently (as yet) not established public opinion, the legal Gray area for an offense of deception is enormous. Sufficient identification of the product is discussed in order to do justice to consumer protection. Uniform minimum requirements and corresponding requirements for identification not only help monitoring, but also protect consumers from being misled and deceived.

Keywords: Meat, New Developments, Veterinary Public Health

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Institutionalizing “Value-for-Money” Framework in North Macedonia - A Means for Strengthening Public Spending Effectiveness and Supporting Fiscal Consolidation

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Abstract

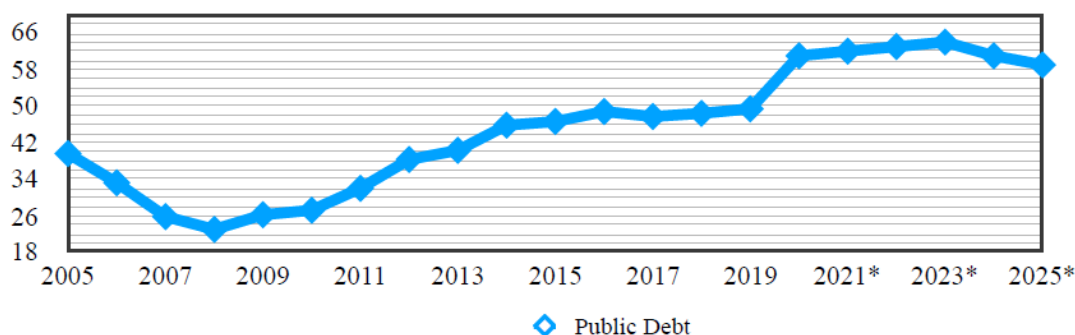
In 2020, the Central Bank and the Government of North Macedonia, as many others worldwide, undertook unprecedented monetary and fiscal measures to counter the severe economic contraction caused by the COVID-10 pandemic. Without these policy actions - aimed at supporting households' income, maintaining companies' liquidity and preserving jobs - it is estimated that the contraction in 2020 would have been almost twice worse. Notwithstanding the positive effects of this immense fiscal stimulus on the economy, in 2020 alone, the public debt increased by 10.8 percentage points, and for the first time in the country's 30-years of independence, it surpassed the 60% threshold set with the Maastricht criteria. High debt levels are particularly alarming for a small and developing economy as the Macedonian one. It not only narrows the fiscal space for delivering policy support for a near-term recovery, but also limits adoption of policies needed for advancing the human capital and greening and digitalizing the economy and society. Hence, along with maintaining targeted support to businesses and households, reduction of public debt represents an immediate fiscal priority and is a key element of the country's medium-term fiscal policy. While consolidation of public finances will necessitate interventions in both revenue and expenditure, the paper argues that the consolidation process should incorporate new measures and frameworks designed for enhancing the effectiveness of public spending. In this context, it explores introduction of “value-for-money” framework in the process of fiscal policy-making, arguing that it would help the Government - by ensuring more targeted allocation of public expenditures to public policy priorities - reach crucial balance between sustainability of public finances and pursuing transformative policies aimed at stimulating long-term economic growth.

Keywords: public debt, fiscal consolidation, effective public spending, value-for-money, sustainable public finances

Introduction

In the wake of the pandemic, the public debate was expectedly focused on measures for protecting public health and shielding the economy, centering the attention on the range and swiftness of provisioned budget support to households and companies - to preserve the income, liquidity and jobs. Such extraordinary circumstances left no room in public discourse for discussing long-term impact that a fiscal stimulus of a size of 9.2% of GDP [1] would have on public debt and sustainability of public finances. And the impact is vast. In 2020 alone, public debt increased by 10.8 percentage points and reached the level of 62.5% of GDP in the first quarter of 2021, for the first time in the country's history of independence, surpassing the 60% threshold observed with the Maastricht criteria (Figure 1). This has sparked scholarly debate on sustainability of public debt and necessity for post-pandemic focus on fiscal consolidation. However, there is a lack of discussions on reliability of the Fiscal Strategy for 2021-2025 [2] that sets the fiscal consolidation as a key element of the country's medium-term fiscal policy, specifying measures and interventions on both revenue and expenditure side of the budget. The same applies when it comes to concrete actions for cutting unproductive expenditures and targeting budget allocations towards programs that support long-term growth.

Figure 1: Public debt of North Macedonia



Source: Ministry of Finance, Dec.2020 (*projections)

Purpose of Study

By questioning the reliability of assumptions underlying the Fiscal Strategy 2021-2025 and its potential implications on the public debt, the study tries to shed light on the increased pressure Government will face in medium-term consolidation of its public finances. It aims to contribute to the public debate in this area by offering a discussion on the benefits of regular expenditures reviews as part of the budget process, arguing introduction of the “value-for-money” framework in the fiscal policy-making.

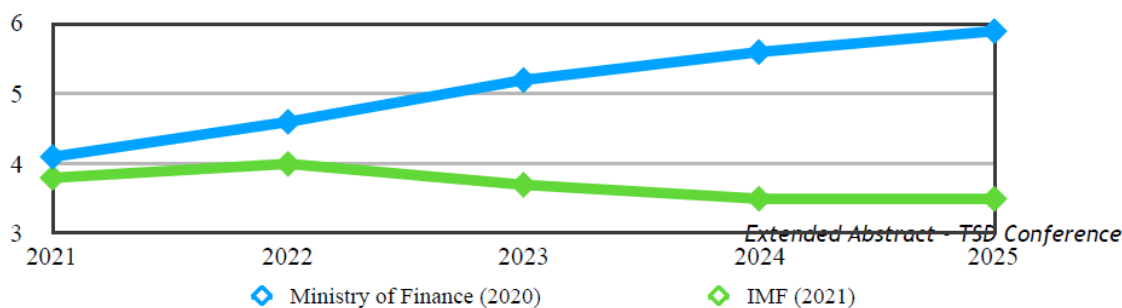
Research Methods

The research method employed in the study is combination of several secondary data sets. The methodology consists of (a) analysis of secondary quantitative data - official statistics provided by external sources of secondary data, primarily the Ministry of Finance’s website and the IMF WEO database, and (b) documentary analysis of government policies - strategies, programs and action plans, as well as OECD, World Bank, and IMF publications related to public debt, fiscal consolidation and measures and frameworks for strengthening effectiveness of public spending.

Findings and Results

As presented in Figure 2, there is a notable difference between GDP growth projections of the Ministry of Finance and of the IMF [3], with the World Bank forecasts being most conservative [4]. Overly optimistic assumptions underlying the Fiscal Strategy may undermine the expected consolidation outcomes, negatively affecting it in two ways: directly - by increasing public debt through a lower denominator (nominal GDP), and indirectly - by deteriorating the fiscal balance due to the automatic stabilizers. This may increase the pressure for larger spending cuts [5] - particularly when strict fiscal rules are imposed. The fact that discretionary spending accounts for less than 20% of total expenditures [6] may considerably limit the maneuvering space, thereby prompting linear, undifferentiated budget cuts that in a long run reduce the quality and quantity of public services, negatively affecting citizens' trust. [7] This may be prevented by putting in place effective tools for assessing effectiveness of government programs [8] and determining their relative importance for public policy priorities. However, despite running a rather intensive Program for improved management of public finances [9], Ministry of Finance lacks institutional framework for regular expenditure reviews, which is limiting its capacity for more targeted allocation of budget expenditures towards productive programs that most heavily contribute to the longterm economic growth.

Figure 2: GDP growth projections for North Macedonia



Source: Ministry of Finance, Dec.2020; IMF WEO Database, April 2021

Source: Ministry of Finance, Dec.2020 (*projections)

Conclusions and Recommendations

The fiscal consolidation process in the country will undoubtedly be a long and challenging one, particularly in the immediate post-pandemic period that will still require certain fiscal support to businesses and households in dealing with the consequences of the pandemic-induced economic crisis. To reach crucial balance between financing pandemic-related needs and long-term development goals, as well as between supporting development and maintaining sustainable public finances, it should undertake ambitious reforms that, among other priorities, entail increased effectiveness and efficiency of public spending [10]. Consolidation will most certainly necessitate revision of the expenditures structure and cuts in current expenditure, which may prove particularly challenging taking into consideration the present limitations on the expenditure side of the budget and low share of discretionary spending. To enable nonlinear expenditure cuts and ensure utmost utilization of available finances by allocating public spending to productive programs that support development goals, the process should place great emphasis on program analysis, assessment of value for money of public policies and on cost-benefit analysis of public investments [7]. Introducing the “value-for-money” framework at the fiscal authority may valuably support the consolidation process, by ensuring greater technical efficiency of public spending – increasing “value for money” of existing budget allocations, as well as by improving allocation efficiency - reprioritizing expenditures within, and between budget users towards projects of higher priority and value. [5] Future work may focus on necessary infrastructure, i.e. institutional mechanisms needed for implementing “value-for-money” in the country.

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‘Modernization of engineering curriculum in higher-education’ - A necessity for tackling the modern challenges in Civil Engineering and Architecture –

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Abstract:

When I started my academic career in 2014 in University of Tetova, as a lecturer in the Faculty of Applied Sciences, I was confronted with the many problems that both teachers and students were facing every day in their education activities. Above all, I noticed that the culprit of their difficulties was the poor content and organization of their curricula. Later, when I began my academic career as a professor in the Faculty of Civil Engineering and Architecture, in University Mother Teresa, I was even more aware of this problem.

Finding myself in a favorable position as acting Dean of Faculty, I set myself as one of the priority goals to work intensively in modernizing and transforming the curriculum of our faculty study programs (both Civil Engineering and Architecture) to better answer the new challenges that our profession is imposing to our community. The most important thing that our academic community should do is to adjust our study programs to the new challenges in preparing our future generations with the right tools they need.

I believe that for fostering the quality learning in our future students and for paving their way for successful engagement in the engineering industry, we must make serious changes and upgrades to the curriculum of our study programs. And so, I took this challenge by starting my preparations in 2016 and my continuous efforts lasted until the end of 2020 when our faculty successfully submitted the new curriculum version of both Civil engineering and Architecture programs for reaccreditation.

The three key point I was attentive throughout this entire process were:

1. ‘Adaptation of the new curriculum’ to the generally accepted standards of EHEA (European Higher Education Area),
2. Maximizing (as much as possible) the ‘compatibility of the new curriculum’ content with the related higher-education institutions in our region [1] – [7] (to facilitate the collaboration between our regional related institutions), and most importantly
3. ‘Modernizing our curriculum’, by introducing the long-awaited courses that our students and our engineering profession desperately needs to better cope with the modern challenges of our profession

With this paper, my intention is to make an elaborate presentation of the modernized curriculum of both study programs of Faculty of Civil Engineering and Architecture of University Mother Teresa, (as they were accepted by the accreditation institution of our country).

Keywords—*Civil engineering, architecture, Curriculum, European higher education area*

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A historical perspective of EU-Russian relationships

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Abstract

Europe's interaction with Russia includes Peter the Great, the Napoleonic and Crimean Wars, the First and Second World War, the antagonisms during the Cold War, stretching to the present days within what is called the European Union and the Russian Federation! Although in several periods throughout history, the Russian establishment has been characterized by pro-Western policies, today, the EU's relations with Russia are undergoing a tense period due to the Ukrainian crisis. The crisis has turned into a threat to other Eastern European member states, namely the eastern wing of the EU! That is why political developments in this part of Europe are so important to the Union. When it comes to the eastern neighbours of the European Union, one should not forget the fact that the launch of the policy called the *Eastern Partnership*, which provided for the rapprochement of the post-Soviet area with the EU, encouraged Russia's impatience with this policy of official Brussels! This area, which after the 1990s became known as *blizhnee zarubezhe* – *Near Abroad*, for Russia is a primary geopolitical and strategic interest, which was also identified in official documents of Russian foreign policy in the post-Soviet period. This paper will treat the EU relations with Russia i.e. the historical context and relations after the arrival of Vladimir Putin at the head of Russian politics, until the events of 2014 with the Ukrainian crisis.

Key words: *Common Neighborhood, Eastern Partnership, Eurasian Union, Multipolarity, Geo-economic interest.*

Introduction

The second half of the twentieth century bipolarized the world political scene. Those who were once allies to stop German aggression turned into political, military and ideological enemies. After the fall of the Soviet Union, Russia as a new member of the world community found itself in a situation that underwent a transformation both domestically and in foreign policy. Today, the EU's relations with Russia are undergoing a tense period due to the Ukrainian crisis.

The events that Eastern Europe is going through, especially after the Ukrainian Crisis, are indications that the presence of the European Union and the NATO alliance is important for the preservation of peace and strengthening of the security architecture not only in Eastern Europe but as well in Southeast Europe (*t. e. the Balkan Peninsula*), as a region which aims in the near future to be part of the European family and European values.

The fact that this topic is addressed as part of Regional studies, International Relations or European studies, even including our university facilities, shows the importance of this article.

Purpose of Study

The aim of this research initially is to present a historical retrospective between these two actors, namely the European Union and the Russian Federation, as two important actors in the Eurasian table. (*Zbigniew Brzezinski*).

Here we will also see the development of their relationship which sometimes has been characterized by cooperation; tension and conflict, just as *English School* of International Relations explain the behaviour of the actors.

We consider that this paper to be a useful contributing for researchers of International Relations, Regional and European studies. Beneficiaries of this paper will be also students attending *Balkan and Eurasian studies*, as part of the social sciences in our universities. Therefore, we believe that the article fills a gap among researchers and students in general.

Research Methods

Given the fact that qualitative method is used to describe a particular phenomenon that has not been previously studied, or to document existing knowledge of that phenomenon, in this article the main research method which will be used is *qualitative method*. In general, when we talk about phenomena in International Relations, this method is used to better understand processes that make up international politics. We will use *secondary sources* as data collection, such as *government documents or publications* from EU institutions or Russian institutions; e.g. conclusions from European Parliament, Council of the European Union, The Foreign Policy Concept of the Russian Federation etc..

Previous research will be consulted that would help in finding relevant information about our article. The main hypothesis of the article is that, the relations between these actors in certain period had characterizes extension of influence in the countries of East Europe - namely the countries which were part of the former Soviet Union.

East Europe represents a common neighbourhood between Russia and EU, but at the same time, important area for both sides. In this article, we will use the *descriptive method* also, which is used to describe the developments that characterized EU- Russian relations in certain periods.

Conclusions

European-Russian relations are marked by ups and downs. The relations between these two actors throughout history have been subject to a dialectics, just as *English school* theorist Martin White describes the events in the world of International Relations. Seen from Moscow's perspective, the countries of Eastern Europe – from Belarus to Armenia – are considered a *zone of Russian influence*! Russia's actions, not only in Eastern Europe but also in the wider world are attempts to perceive itself as a superpower state and return to its former status!

In terms of world politics, Russia is interested for the *multipolarity* environment –*neorealist approach*- while the European Union is an entity built upon a liberal basis, i.e. upon the values of *institutional liberalism*.

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The influence of the success of the high school students on the state Matura and the success in mathematics in secondary education, in their choice of Faculty and study program, as well as the success achieved in their studies

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Abstract

This paper will explore the math success of students at the Faculty of Technical Sciences at Mother Teresa University - Skopje, before and after enrolling. The research will be aimed at determining whether the choice of subjects taken by the graduate students at state Matura and the success they have achieved in mathematics in secondary education, influences the choice of the faculty and the study program. Also, does this choice affect their success in math during their studies. This research will also determine the relationship between: the success at mathematics of students in secondary education and the state Matura, with the success that have achieved during their studies.

The study methodology will be done according to the comparative study approach comparing the success at mathematics of students in secondary education and the state Matura, with the success that have achieved during their studies.

Data collected from tests and questionnaires will be subject to statistical analysis.

Keywords: Mathematics, success, choice, survey, student

Experiences from the online teaching of mathematics during pandemic of CoVid19 and comparison of the results with the results obtained before the pandemic

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Abstract: The pandemic of Covid19 has disrupted the normal life and had profound effects on everybody's life. Due to this unprecedented event the established practices in our university were challenged and significantly changed. The usual education with physical presence was changed with online teaching using various platforms. In this article I am going to present the experiences of the new types of teaching platforms that were used chronologically as well as statistical analysis of the results of the students compared with the results before the pandemic. We are going to present our views considering these experiences and how they can be improved.

Keywords: education, pandemic, online, CoVid19, comparison, statistical analysis, evaluation.

“THE RELATIONS: FAKE NEWS AND POLITICS”

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Introduction

Introducing the problem and arguing why this research study undertaken by the researchers is important to be addressed and solved. Explain the gap in the published research regarding the topic, and reference previous research that address this problem or domain. In the recent years, the world, and the states themselves have faced many challenges, among which the phenomena of fake news, which has influence over the national as well as international politics, but also in other spheres of life. The phenomena of fake news is harmful not only for concrete events or persons, but in general for the public sphere because it can create the wrong image for a person, event, legal entity etc. and its' publishing can damage somebody's integrity. The phenomena of fake news is new and therefore the wider audience can not recognize these kind of news which can have deliberate or undeliberate content in order for the people to change their mind and opinion on certain problematics.

Keywords: fake news, journalists, media

Field of the paper: Social sciences

Purpose of Study

The research study should clearly emphasize the purpose of the study and explain and argue what it's trying to contribute with, and briefly describing its possible contribution/s. The purpose of the survey is to show the mutual relations between fake news and politics as well as the influence of fake news in the media and their impact in the national and international politics. The intention of the survey is also to show who and why is producing the fake news, but also how they can be recognized and prevented from further negative consequences from their publication.

To reveal the influence of the fake news onto the national and international politics, a survey has been realized in the period of 25-30th of September 2019 in Hamburg, Germany. Part of the survey has been done electronically through mail. It has involved 50 media workers throughout the world, who have answered a written questionnaire consisted of 19 questions, tackling topics connected with fake news and its' influence in politics. The survey also involves qualitative aspect, given through interviews with international experts, precisely, a media expert and expert for fake news, with a focus on elections.

The wider audience still can not recognize the true from the false news and it is hard for the states to find the

perfect formula to fight fake news. Still, mechanisms can be found in order for the public to be aware and recognize elements of fake news so that one can avoid their influence. Some of these mechanisms are: making a list of credible media; establishing a “soft” form of self regulation in the media sphere or having concrete action plans regarding fake news.

Research Methods

The research method used and the methodology must be clearly stated and described in sufficient detail stating the hypothesis and research questions with sufficient references. For the purpose of realization of the survey, a questionnaire consisted of 19 questions was delivered to 50 media workers throughout the world. With forty six (46) of them the questionnaire was realized live, in person, while with other 4 (four) it was sent by mail. The questionnaire included different kind of media workers, journalists, editors from all over the world.

The survey also included interviews out of which one live with DonaraBarojan⁴, an international expert in fake news, who runs a start up in London. Also an interview with the media expert LuukSengers⁵, who works as university lecturer, trainer and investigative journalist, writing for one of the most influential magazines in Netherland, „DeGroeneAmsterdammer“⁶ was realized about the influence of the fake news in traditional media and in the media in general.

Findings and Results

The expected findings and arguments of the work should be described and explicitly argued. All the tables, images and figures should be centered. Figures and images should be numbered and figure headers should be placed under the figure or image; as for the tables, they should also be numbered and the table header should be placed at the top. References (if any) of the tables, figures and images should be presented right under the tables, figures and images in the form of author surname and publication date.

The results show the enormous influence that the fake news can have over the course of political events in domestic and international politics, but also in other spheres of life.

According to the findings, the media workers throughout the world define the fake news as news with false content, produced deliberately and with a specific “agenda”. Some of the journalist emphasize that critical news towards the Government are considered to be fake news.

Answering the question “To what extent are the fake news present in the everyday informing in your state?”, most of the media workers (or 28 out of 50) have said that they are present in the everyday informing. According to the answers, media workers believe that fake news are present both in the countries of EU, as well as out of EU.

Most of the surveyed answered positive on the following question “According to you, can fake news change the course of the events at national, as well as on global level?”. Only nine (9) have the opposite opinion.

Asked to name the authors of the fake news, the media workers most often point out that these categories of people are connected to the centers of political or economic power. Very often they point out that the author of the fake news is

⁴ The interview with DonaraBarojan was realized on 21.09.2019 година in the Macedonian institute for media, Skopje, Republic of North Macedonia

⁵ Interview with LuukSengers (lsengers@me.com) realized electronically on 25.11.2019

⁶ Available at: <https://www.groene.nl/>

the Government itself. There are also frequent comments that the secret services produce the fake news, as well as the agencies for surveillance, but also the people from different political or economic circles. While some media workers mention “people with alternative agenda”. There are also frequent comments that fake news are being produced because of political revenge.

The main reason for producing fake news, according to media workers, are: in favor of political party (44), then because of personal profit (25), because of personal favor (8), and the rest (4) answers are consisting various explanations. The conclusion from the survey points out that main reasons for producing fake news are party interests, which follows up to the previous question about the authors of the fake news whereas the most common answers were that authors of fake news are people who work for political causes or are politically motivated.

Asked to explain the “Influence of the fake news upon journalism and onto the quality of people’s lives”, almost all answers point out to the same conclusions-that the fake news destroy journalism and that its’ credibility is being ruined by fake news, which results in lack of confidence of the public towards the media.

From the given answers, it can be concluded that fake news influence and lower the level of credibility of journalism as a whole. Most of the surveyed comment that people are misinformed, disoriented and that they believe less in media, especially the traditional ones. Most of the media workers are convinced that the fake news create wrong picture in reality, or that they prevent the real information, whereas the people or the audience can not differ the truth from the lie. Or in other words, it is emphasized that fake news are “masked” as true news, so “the truth is not know by anyone anymore”.

Politics is the sphere whereas the fake news are most present, believe most of the surveyed (48). Only twenty four (24) answered that fake news can be found in economy, six (6) think they are in culture, while the others believe they can also be found in entertainment and other areas as well.

One of the experts included in the survey, Barojan⁷, emphasizes that the disinformations are being used by the domestic political parties, individual candidates and PR companies hired by the political parties. But, according to her, disinformations are also being used by foreign governments that are trying to be involved in elections, or to be involed in neighboring countries as well as in the countries whereas they would like to make an influence.

The investigative journalist LuukSengers⁸ has the impression that the fake news have harmful effect because the majority of the people in any state does not consume the news from credible sources, but they have easy access to internet and the social media. Therefore, he concludes that fake news have influence in international politics. Lately, the term of “post-truth” is popular. Casper Grathwohl⁹ from “Oxforddictionaries”, says: “Fuelledbytheriseofsocialmediaas a newssourceand a growingdistrustoffactsofferedupbytheestablishment, post-truthas a concepthasbeenfindingitslinguisticfootingforsometime”.

Conclusions and Recommendations

Conclusions should include (1) the principles and generalizations inferred from the results, (2) any exceptions to, or

⁷The interview with DonaraBarojan was realized on 21.09.2019 година in the Macedonian institute for media, Skopje, Republic of North Macedonia

⁸Interview with LuukSengers (lsengers@me.com) realized electronically on 25.11.2019

⁹Availiable at: <https://www.bbc.com/news/uk-37995600>

problems with these principles and generalizations, (3) theoretical and/or practical implications of the work, and (4) conclusions drawn and recommendations as well as future work empathizes.

According to media workers fake news are most present in politics, even though they can be found also in other areas, while the authors of the fake news they detected governments, political parties or “someone with political agenda” or a motive for personal profit. Most of the media workers agree that the fake news influence the course of international politics.

Fake news, media workers believe are mostly used in political purposes, which has been proven within this survey.

Fake news can be shared through social media, but they can also be produced in traditional media. Experts emphasize that fake news can be shaped in certain form in order to attract the public's attention in certain direction in order for them to improve or discredit someone's reputation, integrity etc. This is also the case with states with high levels of democracy.

It is hard to find ideal formula in fighting fake news, but activities can be undertaken, such as media literacy, trainings and education of the wider public in recognizing fake news.

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Political and military developments in the Republic of North Macedonia during 2001 war according to British press

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Abstract

The Republic of Northern Macedonia was the last of the other Yugoslav federal units to be involved in the inter-ethnic war. The beginning of 2001 finally destroyed the "oasis of peace" which was constantly promoted by local authorities. The outbreak of a new conflict in the Balkans aroused great interest in Western diplomacy and media. The British press with special emphasis followed the events closely following the political, diplomatic and military developments on the ground.

The daily press like broadsheets and the tabloid devoted themselves to the events in Northern Macedonia on a daily basis for months on end. In addition to field reports, various analyzes and debates from eminent figures of world political and academic life were published there. Therefore, we consider that this study is important for the fact that it analyzes the events from a more neutral point of view.

Keywords: NorthMacedonia, Balkans, diplomacy, war, conflict, peace.

Political developments in the former Yugoslavia (Kosovo) during 1989-90 according to British diplomacy

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Abstract

The period of 1989-1990 in terms of its character is of special historical importance, packed with many important events of political, economic, social and cultural dimension throughout Eastern and Southeastern Europe. The former Yugoslavia, respectively Kosovo was the hottest political hotspot in the region. The more the Belgrade regime treated Kosovo badly, the more Kosovo's resistance intensified and the situation during the summer of 1990 escalated into all dimensions. The events that escalated day by day also aroused the interest of many European countries. These events have been taken seriously, so the various diplomacies have been interested in their course. Among the great diplomacies is the British one, which had shown its interest in the issue of Kosovo. For the events and political developments during this period the British government was quite active and communicated with all the diplomatic services in the former Yugoslavia, London, Washington and Brussels. This study is based mainly on British diplomatic sources which are published for the first time and are of particular importance.

Keywords: Kosovo, Balkans, diplomacy, communism, regime.

Curriculum Development for Education Towards Sustainable Development – A Real Example

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Abstract: This paper describes goals, process, and results in the effort to introduce new curricula at The Faculty of Technical Sciences of “Mother Theresa” University in Skopje fully devoted to teach students in the direction of sustainable development. The idea was born in the process of reaccréditation of the old curricula named “Mechanical Engineering and management” at The Faculty of Technical Sciences. The authors of this paper, and the idea for reconstruction were fully aware of the direction Mechanical Engineering needs to go to contribute to the sustainable development of the country and wider. Therefore, that idea led the developing process into new curricula titled: “Sustainable Design in Mechanical Engineering”. From total of 40 courses, 15-20 are fully related to sustainable development goals and the curricula includes also a number of projects and diploma work by which students will additionally have an opportunity to add to their understanding and knowledge of sustainable development tools. The new curricula successfully passed the process of accreditation and it is now a part of this University offer. Based on this curricula, a number of courses for lifelong learning will be developed. It is expected that this curricula will attract attention both of the new students, but also of the professionals at different companies, state and municipality institutions.

Keywords: curriculum, design, sustainable, development, mechanical engineering

Sustainability of the peace proposals prior to the Rambouillet Peace Conference

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Abstract

Expectations that with the Resolution 1160, adopted by the Security Council on 31st March 1998, substantial measures would be taken for restoration of the peace in Kosovo became unrealistic. Use of force prevailed over the dialogue. Escalation of the violence imposed the urgent need for more determinant approach of third party involvement in the conflict resolution. Therefore, Security Council in the Resolution 1199 explicitly requested from Belgrade and Pristina constructively to proceed towards a political solution through peaceful means and under international mediation. For the period from October 1998 to January 1999 Christopher R. Hill, in the role of the mediator, presented several peace proposals to the Serbian and Kosovo Albanian representatives. Reaching a long-term solution became unsuccessful once more. It proved difficult to come out with a peace agreement that meets each party's core interests. This paper analyzes the characteristics of the formula established during the mediation process. Sustainability of those solutions is examined based on the Berridge's concept on “*a good formula*”. To understand how in the Hill's proposals were merged the principle on sovereignty and territorial integrity and the principle on substantial autonomy are analyzed the content of the peace proposals. In conclusion, maintaining flexibility and comprehensiveness in the drafts very often resulted with impracticable solutions and imbalance in what was offered to the parties in conflict.

Keywords: peace proposals, formula, mediation, sustainability, Kosovo

Introduction

Who will gain what it is one of the key components for successful settlement of a conflict. Security Council with Resolution 1160 and Resolution 1199 reconfirmed its position that must be preserved sovereignty and territorial integrity of the Federal Republic of Yugoslavia and seeing the solution in the substantial autonomy for Kosovo. Drafting a peace proposal that will comprise both principles it was very challenging, particularly taking into consideration that Belgrade and Pristina had completely divergent requests. In those circumstances finding the balance had to be enforced with an inclusive solution that would fulfill the demands of both parties equally. Studies on conflict resolution regarding the war in Kosovo mainly look over the role of the international community from the perspective of the humanitarian intervention. Many questions remain about the effectiveness of the third party engagement in preventing the war in Kosovo.

Purpose of study

This paper aims to analyze the characteristics of the formula established during the mediation process prior to the Rambouillet Peace Conference. Understanding whether in the proposed peace agreements were included sustainable solutions that addressed the roots of the conflict in a practicable way can be an important contribution to the literature on conflict management.

Research Methods

To determine how in the Hill's proposals were merged the principle on sovereignty and territorial integrity and the principle on substantial autonomy are analyzed the content of the drafts based on the Berridge's concept on "*a good formula*". The main focus it is in the elements as simplicity, comprehensiveness, balance and flexibility.

Conclusions and Recommendations

In the proposed peace agreements couldn't be achieved the solution that would be applicable in long terms. The efforts for flexibility made more difficult the practicability of the peace agreements. Insistence for comprehensiveness very often resulted with imbalance in what was offered to the parties in conflict. Regarding simplicity the formulation of the terms in the third and fourth draft of the peace proposal it was more clear and defined. In this paper it was not analyzed the context of the negotiations. Future research can be conduct on the readiness of the parties in conflict to accept the peace proposals without being in a Mutually Hurting Stalemate.

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An empirical approach toward epicureanism: the case of unsustainable food consumption

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Abstract:

Led by the logic that arousal of central nervous system depends on surprise and unpredictability of external stimulus, in this study we investigate whether utility of food can appropriately be described through food's information quantity disposed by its collative properties: complexity, novelty and uncertainty. Methods: To measure food information quantity we applied the Shannon's concept of entropy. We calculated the information quantity on each of the food's collative properties. Testing for effects of information quantity of food collative properties on food utility was performed with multiple linear regression modeling. To test whether the relationship between food information quantity and food utility is affected by consumers' information seeking appetite we performed moderation analysis. Testing how food information quantity affects food utility we tested the mediator role of arousal potential of food (namely the ability of food information quantity to repress the consumers' information seeking appetite) on the link between food's information quantity and food's consumption utility. Results: Results from multiple linear regression showed that food utility is significantly predicted by information disposed from food collative properties. Results from moderation analysis results show consumers' food information seeking appetite moderates the link between food information quantity and food utility. Whereas results from mediation analysis showed that the construct arousal potential of food mediates the link between food's information quantity and food's consumption utility. Conclusion: We conclude that food utility is an abstract concept, namely a purpose of the consumers' exploratory activities to encounter foods whose information quantity is able to make them aroused by repressing their information seeking-appetite.

Keywords: epicureanism, sustainability, food, waste, consumption

Introduction

In social sciences, there is a tendency to define constructs (or systems) in terms of inputs-outputs analogy. The construct of utility, an unobserved variable which cannot be explained in words, has been subject of such approach for decades in economics (Samuelson, 1937; Kauder, 1965; Harsanyi, 1953). Plenty of efforts to measure and quantify utility have shown to be relatively successful in terms of applying calculus (León, Navarro, & Nualart, 2003; Riker & Ordeshook, 1968), statistical inference (Harless & Camerer, 1994; Schwarzkopf & Kourtzi, 2008) and even logic (Shoham, 1987). The first two measures have been considering the black-box modeling approach (Bunge, 1963) where utility has been viewed in terms of its inputs (ex. consumer satisfaction) and outputs (ex. willingness to buy the product). Such measurement of utility has been done without any knowledge of utility's internal workings. Furthermore, preference learning theorists argue that "internal workings" of economic concepts are not important for inferring consumers' preferences (Cheng, Fürnkranz, Hüllermeier, & Park, 2011; Fürnkranz & Hüllermeier, 2003; Korable & Zanuttini, 2010). Whereas others consider this approach as necessary, because being able to measure and thus being able to explain a construct, does not imply that you can properly understand it (Braeutigam, 2005; Camerer, Loewenstein, & Prelec, 2004; Camerer, 2008). We considered that a more productive approach of generating knowledge about utility would be defining utility in terms of its subsystems' internals, namely grey box modeling (Bunge, 1963). In general, this type of modeling has been shown much more effective than black box modeling, regardless the difficulties and sophistication required by the researcher to understand the subsystems.

Purpose of Study

The general research problem of our study was related to whether, and if yes, how does rarity or availability (as general concept) of food affects food utility? We considered this research question to be best answered by adopting an interdisciplinary approach. Therefore, we applied knowledge from neuroeconomics and information theory to best describe the hypothesized relationships between concepts of availability and rarity with utility. The structure of this study is as follows: the first section summarizes the relevant literature that leads toward building three conceptual

models: (1) role of food novelty, uncertainty and complexity on food utility, (2) the moderator role of consumers' information seeking appetite on the strength of the relationship between food information quantity and food utility and (3) mediator role of arousal potential of food on this relationship. After building the theoretical framework we raised the research questions once again and formulated hypotheses for our proposed conceptual models. In the third section we describe our measures, whereas in section four we perform empirical specification of the conceptual models, thus continuing with model analysis.

Research Methods

This study was guided by these three research questions: (a) Do food collative properties affects food's utility? (b) Does the "strength" of the consumers' nervous system moderates the link between food's information quantity and food utility? (c) How is food utility affected by food information quantity? To answer these questions, we formulated three hypotheses:

H1. Food utility is affected by food's collative properties: uncertainty, complexity and novelty.

H2. The effect of food's information quantity on utility is moderated by consumers' food boredom susceptibility.

H3. The effect of food's information quantity on utility is mediated by the arousal potential of food.

Findings and Results

Results from regression analysis: Food utility is significantly positively correlated with all three food collative variables. Arousal potential of food is significantly negatively correlated with food information seeking appetite. Food collative properties are not significantly correlated with each other which means that regression analysis of assumption of multicollinearity is met.

We were interested in the relationship between the food information quantity (predictor) and food utility (outcome). The empirical specification used in this paper is given by:

$$U_i = \alpha_0 + \alpha_1 N_i + \alpha_2 T_i + \alpha_3 C_i + \epsilon_i$$

where U_i is a measure of the food utility and i indexes a particular country. N is food novelty, T is food uncertainty and C is food complexity. A multiple linear regression was calculated to predict food utility based on food complexity, food novelty and food uncertainty. A significant regression equation was found ($F(3, 66) = 27.560, p < .000$), with an R^2 of .556. Participants' predicted food utility is equal to $1.847 + 1.395 (\text{complexity}) + 4.390 (\text{uncertainty}) + 0.175 (\text{novelty})$, where these collative properties of food are measured in BITS. Food utility increased 1.395 dollars expenditure for each bit of food complexity, 0.175 dollars expenditure for each bit of food novelty and 4.390 dollars expenditure for each bit of food uncertainty. All food collative properties were significant predictors of food utility.

We hypothesized that the strength or direction of the relationship between food information quantity and food utility is affected by consumers' food information seeking behavior (Figure 1). To explore these effect we conceptualize the moderating variable statistically. We used regression analysis to regress food utility on food information quantity and to this model we added the interaction effect of food information quantity with the consumers' food information seeking. Thus, the moderation model was:

$$U_i = \beta_0 + \beta_1 F_i + \beta_2 S_i + \beta_3 (F_i \cdot S_i) + \epsilon_i$$

In this case, the role of food information seeking as a moderating variable is accomplished by evaluating b_3 , the parameter estimate for the interaction term.[1] See linear regression for discussion of statistical evaluation of parameter estimates in regression analyses.

Results from moderation analysis: The overall model was significant, $R^2 = .385, F(3, 70) = 13.821, p = .000$. As shown in Table 3, the interaction between food information quantity and consumers' food information seeking appetite was statistically significant, $b = -5962.341, 95\% \text{ BCa CI } [-11712.814, 211.868], t(70) = -2.071, p = .042$.

We propose a model that describes why the food information quantity exerts effect on food utility where arousal potential of food is causally located between food information quantity and food utility. The form of this model is depicted in Figure 4. The intervening variable, namely arousal potential of food is hypothesized as the mechanism through which food collative properties influence food utility. Arousal potential of food represents the ability of food information content to repress the consumers' boredom susceptibility from food. Mediation analysis was performed in three steps:

Step 1: We regressed the food utility on the food information quantity. We wanted to confirm that the food information quantity is a significant predictor of the food utility:

$$U_i = \gamma_{10} + \gamma_{11} F_i + \epsilon_1$$

Step 2: We regressed the mediator, in our case arousal potential of food on the total food information quantity. In other words, we wanted to confirm that the food information quantity is a significant predictor of the arousal potential of food:

$$A_i = \gamma_{20} + \gamma_{21} F_i + \epsilon_2$$

Step 3: To confirm that the arousal potential is a significant predictor of the food utility, we regressed the food utility on both the arousal potential of food and food information quantity:

$$U_i = \gamma_{30} + \gamma_{31}F_i + \gamma_{32}A_i + \varepsilon_3$$

Results from mediation analysis: In Step 1 of the mediation model, the regression of food utility on food information quantity, ignoring the mediator, was significant, $b = 0.496$, 95% BCa CI [0.330, 0.660] $t(70) = 5.991$, $p = .026$. Step 2 showed that the arousal potential of food on food information quantity was also significant, $b = 0.008$, 95% BCa CI [0.0003, 0.160], $t(70) = 2.065$, $p = .0427$. Step 3 of the mediation process showed that food utility regressed on both the arousal potential of food and food information quantity, and the effect of the mediator, arousal potential of food remained significant, $b = 5.519$, 95% BCa CI [0.0003, 0.160], $t(70) = 2.191$, $p = .031$. the effect of food information quantity was also significant, $b = 0.451$, 95% BCa CI [0.483, 10.354], $t(70) = 5.439$, $p = .000$. Furthermore, the absolute value of food information quantity effect on food utility without controlling for the arousal potential of food was smaller than the absolute value of the effect of food information quantity on food utility when controlling for the arousal potential of food which means that we have a partial mediation effect of arousal potential. This represents relatively small effect, $n2 = .065$ BCa CI [0.008, 0.146].

Conclusions and Recommendations

Our definition of food information quantity comprised the most elementary partition of every food - information quantity. It applied information theory to shed light on how the arousal systems of the brain work and how through information-seeking appetite as moderator, the food information quantity relates to food utility. Away from traditional view on utility, results from testing our statistical models of food utility show that our working definition of utility is way different than the traditional “calculus” perspective of utility.

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Assessment of the level of awareness and knowledge about sustainable development among high school students in Skopje, North Macedonia

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Abstract: This paper is a result of a project that aims to raise the awareness and enrich the knowledge of high school students regarding sustainable development. In order to build an appropriate program structure it was necessary to assess the current level of awareness and knowledge about sustainable development. Therefore the main intent of this research is to establish a clear picture of the degree of information students have about sustainable development, including its definition and goals, as well as their knowledge of the different types of renewable energy sources, the basic principles of their functioning, their benefits and shortcomings, how much they are present in our country. The research was also focused on analyzing whether there is a connection between areas of living and gender with the comprehension of sustainable development.

Keywords: sustainable development; awareness; high school students

Introduction

The current data about climate change suggests that the amount of time we have left for a point without any return is getting considerably short. Therefore it is important to focus on the awareness and knowledge of the youth about all matters related to sustainable development in order to give them the necessary means for a proactive approach needed to expedite and implement the changes towards a more sustainable lifestyle in a local and global level.

Purpose of Study

The main purpose of this study is to assess the degree of information and understanding of high schools students of public schools in the municipality of Chair, Skopje about sustainable development. This assessment aims to construct the basis for the necessary changes in the educational programs that will increase the awareness and knowledge of the students.

Research Methods

The research method used was a questionnaire about the definition of sustainable development, its goals in addition to the types of renewable energy sources they have encountered and how they function, the amount in which they are present in our country and a scale of how urgent and serious the matter of climate change is according to them.

Findings and Results

The research revealed a considerably low knowledge of students about the definition of sustainable development as well as its goals. However the level of alertness among them about the urgency of a necessary change was higher than the initial hypothesis suggested. The knowledge of renewable energy sources was mainly about solar and wind energy, with a limited knowledge of their basic principles, along with almost no knowledge of other types of renewable energy sources. Their perception about the current state of the quantity of electrical energy that is produced by renewable sources in North Macedonia was relatively close to the actual data. There was a slight difference between students from urban areas whose awareness and knowledge was slightly higher than of those from rural areas but no statistical significant link between gender and the level of awareness and knowledge about sustainable development the later one confirming the initial hypothesis.

Conclusions and Recommendations

The research suggest that high school students are aware and alerted about the urgency of the matter yet lack the necessary knowledge and education about sustainable development which means they lack the appropriate tools to contribute and use their potential for innovation and personal changes that would help accelerate the process of achieving the goals of sustainable development. Consequently the importance of developing an appropriate theoretical and practical knowledge through formal and informal education is more than necessary.

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Assessment of Occupational Exposure Frequency to Chemicals and the Awareness among Automobile Technicians in Debar, North Macedonia

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Abstract: The occupational environment and work procedures of automobile technicians are closely tied with chemicals, which often have fundamental roles in many procedures during daily activities. Automobile technicians can be exposed to different chemicals on a daily basis, which can lead to health deterioration and a lower quality of life with prolonged long-term exposure. The key challenge that health and safety now faces are to engage and influence the huge variety of businesses, particularly small businesses, and to help them manage health and safety more effectively. As a result of insufficient implementation of appropriate safety rules or management procedures, as well as lack of training for the employees to carry out these practices, the majority of exposure occurred especially on projects undertaken by small companies. The main objective of this paper is to assess the occupational exposure frequency to chemicals as well as the level of the awareness among the employees in order to build a more insightful database of issues related to Occupational Health and Safety.

Keywords: automobile technician, chemicals, occupational exposure, assessment, health, awareness.

Introduction

During the daily work that automobile technicians perform, they can be exposed to a wide variety of chemicals. The exposure to chemicals can be short term and / or long-term exposure, which on most occasions goes unnoticed by the technicians. Automobile technicians often complain or have symptoms of exposure to chemicals but on most cases it's the lack of awareness to the dangers of their daily work activities that prevents them from connecting the dots and realizing that it's their daily work that is contributing to the deterioration of their health. The issue is present mostly in small businesses (workshops) where low awareness to the chemicals that the technicians are exposed to, contributes negatively to the overall occupational safety and health levels of the workshops. This is the first time that research of this nature and about this issue has been conducted on the region of Debar, North Macedonia.

Purpose of Study

The purpose of this study is to assess how frequently automobile technicians are exposed to chemicals and how aware are the technicians about their exposure to chemicals and the dangers they face on their daily work. It is important to obtain results that can show us if there is a correlation among employees of certain backgrounds and the frequency they are exposed to chemicals and their awareness levels. Obtaining results means that we can be more focused in targeting those certain groups and increasing the attention to the underlying issues that contribute to the low overall safety and health in the workshops.

Research Methods

This research was conducted on a certain number of workshops and technicians in the region of Debar, North Macedonia. The research methods used on this study include questionnaires directed towards automobile technicians and on-site assessments of the work performed on the workshops. The automobile technicians were divided into 3 groups: mechanics, electricians and auto-body technicians (including painters). Furthermore, the data was analyzed across various subgroups of age, occupation and awareness level. These two methods provide us with data that can be used to gain insight on the level of awareness the technicians have to their exposure to chemicals.

Findings and Results

According to the data obtained by the questionnaire and interviews with a sample size of 59 automobile technicians, 32 of them worked as mechanics, 15 of them worked as auto-body technicians (including painters), and 12 of them worked as electricians. The technicians interviewed ranged from the age of 10 to 67 years old, with a literacy rate of 100%. The majority worked their profession in full time and received training in an apprenticeship fashion. A trend was observed where 75% of the electricians received less training than the other groups of technicians, less than 5 years. Only 3 out of 59 technicians had received adequate OSH training respective to the type of work they perform and the three of them had reached the tertiary level of education.

Conclusions and Recommendations

It should be concluded that from this survey the frequency of exposure to chemicals has a high rate among automobile technicians, and the lack of adequate training shows that the technicians are not even aware of the exposures they had

to the chemicals and the dangers they pose to their health and wellbeing.

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Assessment of Occupational Safety and Health Awareness, Education and Training on the Woodworking Industry Workers in Debar, North Macedonia

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Abstract: The goal of this study was to find the link between workplace accidents and the lack of Occupational Safety and Health education and training on the woodworking industry workforce. The focus of research was to determine the level of the understanding of the importance of personal protective equipment in preventing injuries as well as the amount of information the employees have received about the hazards they can and will face on their workplace and the ways they can prevent or minimize the risks before and during their employment. The research aims to give a more clear insight about how much the alertness of workers needs to be adjusted along with the changes necessary in the degree and type of education needed.

Keywords: assessment, awareness, health, education, training, woodworking.

Introduction

The wood processing industry is one of the industries where workers are constantly exposed to various risks. According to reports from various safety and health studies in the woodworking industry, workers are exposed to varying degrees of risk which range from bacteria, viruses, chemicals and various physical injuries. There is a high risk of accident from the use of woodworking machinery. The facts show that injuries from these accidents are more serious than those caused by ordinary machinery and a large proportion of victims suffer from permanent disability. In the city of Debar there are a considerable number of workshops that deal with wood processing and so it is important to establish whether the employees have the necessary awareness as well as the appropriate education and training about preventing work related injuries and diseases. This is the first time that research of this nature and about this issue has been conducted on the region of Debar, North Macedonia.

Purpose of Study

The purpose of this study is to establish a connection between workplace accidents and the lack of OSH education and training on the woodworking industry workforce as well as create a clear picture of the conditions and awareness of the workers in the wood processing industries in the city of Debar in which case it will contribute to increase the awareness of employers and employees about the working conditions, risks and personal protective equipment.

Research Methods

The study methodology is based upon questionnaires and interviews with a certain number of employees working in the wood processing workshops in the city of Debar where they are constantly exposed to various risks. The data was analyzed and divided across different categories such as: age, occupation, formal education and work experience, in order to assess the awareness, education and training regarding OSH.

Findings and Results

Based on the data obtained from the questionnaires and interviews, the Survey included 63 workers aged from 14 years old to 40+ years old, with a literacy rate of 100%. Most of the workers worked full time and got trained as apprentices. None of the workers had ever received Occupational Safety and Health training. The variables associated with the risk of injury were high physical activity, working at a fast pace or inability to take a break, lack of training, unfavorable ergonomic conditions and lacking sufficient knowledge of PPE.

Conclusions and Recommendations

Workers in the wood processing industry in Debar face illnesses and accidents that come as a result of workplaces, as well as the lack of occupational safety and health programs. They need to have accurate knowledge and proper training on safety and health and different levels of exposure must be measured and monitored. Managers and supervisors need to be continuously trained in risk assessment to identify risks. This will help them to be able to take precautionary measures to avoid or minimize the risks associated with the workplace and reduce the number of accidents. Risk identification, risk assessment and risk control are ongoing processes that must be followed by wood processing industries

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Improving the performance of data warehouse using column store indexes

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Abstract

With the development of electronic devices, information systems, and several services, there is generated a lot of data. Also, the number of Internet of Things (IoT) devices is continually growing and today there are many IoT devices that generate sensorial data. As a result, the volume of data warehouse (DW) enormously is growing, and this presents a challenge in storing, managing, and processing data, especially when we have to deal with IoT systems. There are various problems like difficulties in collecting data, great delay in execution of the queries, long time for generating reports, impact in functions of the software, etc. This can affect the loss of opportunities and business chances of companies. The purpose of this paper is to show how to improve the performance of data warehouse systems that are used for decision support systems, in which an increased volume of data is expected and the need to shorten the response time of complex queries. To confirm the relevance of indicated improvements, experiments, and appropriate performance measurements have been made, where different ways of organizing and indexing data are compared including column store indexes. From the obtained results you will see that using this kind of data organization and indexing (column store indexes), offer increased performance in the processing and execution of queries, as well as the elimination of problems that occur in data warehouses.

Keywords: column store, data warehouses, data processing

Evaluation of the methodological aspect of teaching in higher education using MCDM technique

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Abstract

Evaluation processes in higher education towards quality assurance (QA) and quality control is complex process. The pillar that integrates all aspects of evaluation is the study program itself. Before announcement, it is a subject of accreditation process and must answer multiple criteria before approval. After completion of the study program, graduates acquire the qualifications provided within the accredited study program. In order to be as efficient as it is possible, it has to embrace two important aspects in terms of qualifications delivery: what is delivered (what types of qualifications) and how those qualifications are delivered (what methods are used)? The second aspect can be evaluated using optimization technique Analytic Hierarchy Process (AHP), providing unique approach of quality □ quantity transition in objective manner, thus enabling data processing and generating readable reports.

Keywords: AHP – Analytic Hierarchy Process, QA –Quality Assurance, EHEA – European Higher Education Area

Digital marketing impact on the decision of citizens

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Abstract

The article presents the results of the impact that forms of digital marketing have on the decision of citizens or customers to buy online. It accurately represents the opinion of citizens why they decide to buy and what elements that they see as crucial when deciding to buy. The research was conducted through an online questionnaire with a random sample of 305 respondents from different territories in Kosovo. The results were analyzed through the SPSS program (v.25). The research results show that the main reasons for using social media are related to obtaining information about products and services, but also for networking, offers, and promotions, entertainment, while the areas they buy the most are in terms of technology, clothing, and accessories, while the purchase of books and work tools has a lower level. The research is based on five stages of the process on which it is considered that buyers rely in advance to buy. Those stages are classified into the need for recognition, information research, evaluation, selection decision, and post-purchase evaluation. According to the results of research conducted through Amos SPSS and correlation, we conclude that e-mail marketing and mobile marketing have a positive correlation with the need for knowledge, information research, evaluation, and purchasing decision, while retargeting is correlated only with information research and the need for purchase. In this context, we say that marketing models are a very important factor in citizens' decision-making for online shopping, but based on the results of e-mail marketing and mobile marketing plays a positive role in purchasing decision-making. In this context, I recommend that companies be careful in the forms of marketing through e-mail marketing and mobile marketing so that this has an even deeper impact on decision-making, based on the five stages of the process, which is also based on the decision to buy online.

Keywords

Digital Marketing, E-mail, Mobile, Targeting, Customers purchasing

Emergence of new global communication

Implementation of online learning in higher education and accounting modules Perspective of accounting teachers

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Abstract

Through this research, I have analyzed the benefits and difficulties that have resulted from the application of e-learning within accounting modules. The main source of data was the professors who teach accounting at the faculties of economics, where a random sample of 25 professors from different universities in Kosovo was included. Within the benefits of implementing E-learning, we can consider that they are the application of innovative teaching methods and it is considered that it can be a more effective process of communication with students in terms of notification and consultation. The biggest difficulties found in the study are those of the technical aspect, precisely in the necessity of solving technical problems which are reported by students especially during the lecture, then the dedication of time to conduct online activities with students.

Descriptive statistical analysis was used to present the first results of participation, while correlation analysis was used to measure the relationship between difficulties, advantages, and evaluation of quality factors of online learning as I have singled out in terms of preparation, content, evaluation of technical conditions, time and achievement of student competencies. It is considered that the preparation of the course for E-learning and the content were less difficult compared to the traditional teaching, and in terms of the time it turns out to be appropriate. What can not be considered appropriate and unsuccessful is the activity and active participation of students during lectures, and for this, a method should be applied which obliges and enables the control of each student during the presentation of the course. Based on the research results it can be concluded that online learning was effective and has produced a new innovative form of teaching, which requires specific technical time and conditions for its better realization. In this context, the accounting modules in Kosovo have been realized with great success and I consider that this should continue to be improved.

Keywords

E-learning, Accounting module, High education, Educators

Emergence of new global communication

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Abstract

The new era of global communications has brought serious changes in the way of communication in the world. Communication in every sphere and in each field, as we know it, is slowly diminishing. Over the past period, the process of new global communication was under development, but people were shyly willing to accept the new way of communication. The emergence of the Covid 19 pandemic, dubbed the 21st Century Plague, which took many lives, has accelerated the emergence of new global communication. When the entire world hoped for a change in the way of communication, it happened, not only locally and regionally, but also globally. Suddenly, the business community, educational institutions, hospitals, judicial institutions, municipalities, labor organizations, etc. realized how important it is to change the way of communication in order to realize the planned activities. With the implementation of new types of global communication, the world has also got new way of implementation of organization programs. Protocols and processes have been introduced that require active and precise realization of everything that will be sent from one communication channel (sender) to the other communication channel (receiver). With this scientific paper through the method of analysis of document content and presentation of results, we will analyze and bring closer the importance of the emergence of new global communication. This will clearly emphasize how important it is to follow every small change in the way of communication, in the part of realization of the activities. Eventually, the Covid 19 Pandemic will show how it has completely changed the way society communicates.

Keywords

Communication, Information Technology, Global Era, New Direction

Tough Talk vs Tough Action*

Policymaking and information in the post-Covid era

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Abstract

Following the mid-2017 inbound migration peak of third countries' nationals in Italy, the then Italian Minister of the Interior Marco Minniti signed a Memorandum of Understanding, with the purpose to curb illegal immigration and “liberate our lands from traffickers”. The MoU marked the first step towards a stricter set of national regulations, intensified by the succeeding Minister of Interior Matteo Salvini, and adjusted by the current Minister Luciana Lamorgese. The fight against human trafficking shape the political agenda and steer Italy's public opinion, deepening the gap between those who support the pushback of migrants, on one side, and those who advocate compliance to regulations and treaties, not to mention the respect of human rights. Empirical evidence shows that adopted policies have at least partly achieved their objectives, discouraging irregular migration to a certain extent, but at the expense of migrants' living conditions and their perception by national citizens. The paper provides an overview of the policy instruments deployed by the Italian Government to control the irregular migration wave, and what kind of resistance policymakers have had to confront during the implementation phase from the press and the public opinion. A section of the paper is dedicated to the importance of, and the need for, fair and truthful communication: fact-checking and debunking fake news are presented as necessary tools to inform and guide policymaking in the post-Covid era.

Keywords

migration policy, talk, action, fact-checking, pandemic

The importance of IT technologies in education in pandemic time

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Abstract

The emergence of a pandemic is not something new in the world. There also have been pandemics in the past. The global covid 19 pandemics has been around for a long time. People all over the world are slowly adapting to the changes and lifestyles imposed by the Coronavirus and after a year and a half of living with that virus they have accepted all the challenges and got used to the new way of life. In the paper we described the functioning of the educational process during the pandemic with Covid 19 virus, more precisely, an analysis of the way the classes we hold during the pandemic is given. Emphasis on the application of IT technologies for successful implementation of teaching and achieving excellent results from students is placed. Finally, a conclusion in which we want to emphasize the importance of the application of IT technologies in education during and after the end of the virus is given, in order to emphasize the advantages of their use. We achieve all this by comparing the educational process in a time of pandemic using IT tools and without IT technologies.

Keywords

education, learning, Covid 19, testing.

Education and e-learning as the ultimate trend

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Abstract

The circumstances of the Covid-19 pandemic that took place since March 11th, 2020 in our country also changed the directions of both education and learning process, making the transition from classroom learning to online learning, the so-called E-learning. The same as the main didactic teaching factors: students-teachers and parents who were preoccupied with what would happen to the learning process, as well as relevant institutions such as: Municipal Directorates of Education and the Ministry of Education, Science, Technology and Innovation immediately intensified measures against this urgent need which was not coming to an end to train teachers and provide the most adequate solutions so that students can continue learning online. Consequently, the purpose of this paper is to highlight some of the challenges faced by teachers, pupils and students during online learning and which have been and continue to be the most used platforms by them in the online learning process.

The paper is quantitative and descriptive-analytical and aims to understand the willingness of schools and teachers to work in a hybrid way in the nearest future after overcoming the pandemic: classroom and online learning. The sample of this paper includes 100 respondents: teachers, students and pupils surveyed online from 12 cities of Kosovo. Questionnaire data were reviewed in SPSS program.

Keywords

education, classroom learning, online learning, platform, challenge.

Struktura e nxënësve në baza etnike në RMV të shkollave fillore

2008 – 2018

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Abstrakti

Shpërbërja e Jugosllavisë, sidomos konfliktet mbrenda territorit të saj krijuan probleme dhe vështirësi si mbrenda shteteve po ashtu paraqiste problem edhe për faktorin ndërkombëtar. Nga paraqitja e shteteve të reja, Maqedonia kaloi më së lehti. Si shtet i ri i dal pa konflikt të armatosur u bë një shtet shprese për faktorin ndërkombëtar, mirëpo shpejtajodotëkthehetnështetproblematicdukedështuarnëshumëaspekte shoqërore. Mund të themi se dominante ishte problemi i trajtimit të asaj pjese të komunitetit që nuk flet gjuhën maqedone, pra që katërbëjmekushtin e paretë të demokracisë, të drejtat e jeneriut. Edhe pse shqiptarët treguan pjekuri dhe kulturë politike, maqedonasit u munduan që këtë faktor ta minimizojnë dhe tek ndërkombëtarët taparquesinsielementdestabilizues. Filluan presionet e ndryshme që kulminacioni ndota arrijë te arsimi në gjuhën shqipe. Arsimitarët përjetuan një tmerr institucional, mirëpo ata nuk u ndalën dhe vazhduan me përkushtim takryejn misionin e filluar. Statistikat tregojnë se maqedonasit janë në rënie, kurse mbetet enigme çështja e nxënësve shqiptar që nga 2007 -2018 numri tyre është në rënie, kurse statistikën që flasin për shtimin e popullsisë japin një pasqyrë tjetër, ritje të numrit të shqiptarëve.

Fjalë kyçe

Shkollë, kulturë, demokraci, diversitet, student

Migrant Crisis in Bosnia and Herzegovina: An institutional failure

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Abstract

Migrant crisis has been one of the predominant security challenges for the Western Balkans states. It specifically holds true for Bosnia and Herzegovina due to its dysfunctional political system. Geographical location of the country has additionally enticed illegal migrants to utilize it as a transit route towards the EU. There are external and internal factors that influence the crises, including EU and neighboring states misbehavior and lack of the state institutional response. Due to some retrograded political pushbacks, migrants are only transported in two cantons, which creates an unbalanced burden sharing, undermining overall political and security situation. The role of international community regarding the accomplishment of reforms in Bosnia and Herzegovina will persist crucial, otherwise, country will remain only a “parking lot for migrants” in Europe. Rational: Illegal migrations present an issue which is endangering the stability of the region and beyond. This calls for the reexamination of state policies for effectively responding to illegal migrations. The purpose of the study is to examine impacts of the massive illegal immigrants, the country’s response, and to outline possible solutions for the future. Methodology will include application of qualitative research methods, while data will be collected through secondary research, literature review and document analyses. Results present that country has a complex constitution and internal composition. Croats and Serbs refuse to receive migrants into territories where they are the ethnic majority. EU has invested over €88 million since 2018 to contain migrant crisis. There are malign activities of the neighboring countries as well as the EU reluctance to receive migrants. Conclusion that might be derived is that the political setting in Bosnia and Herzegovina, framed by the Dayton constitution that is imposed by international community, seriously prevents the country to adequately respond to the migrant crises.

Keywords

illegal migrations, Bosnia and Herzegovina, Western Balkans, European Union, security.

Covid-19: Employment situation of women and young people in Albania

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Abstract

Analysis suggests that groups at particular risk in this Covid-19 situation are likely to be young people and the lowest paid, with women more adversely affected than men. Older people are also likely to be particularly at risk. *Purpose:* The purpose is to explore the effect of the pandemic in women and young people employment situation. *Methodology:* Semi-structure interviews were developed with women and young people (N=16) about their employment situation during COVID-19. Genderwise, females were considered at high risk of unemployment. Women are over-represented in more affected sectors (such as services) or in occupations that are at the front line of dealing with the pandemic (e.g. nurses, education), they also as being at high risk in terms of job losses and reduced working hours, because they are working in sectors that are most affected by the pandemic such as manufacturing, accommodation/food services, wholesale/retail trade, fashions, call centers, etc. For young people this period has been difficult because of disruption to education, employment and income security difficulties. Before the pandemic, young people were already facing challenges in the labor market. These are worsened by the COVID-19 crisis; some youth are facing difficulties balancing education and training with the need to complement family income, others are facing the challenge of searching for their first job in a labor market.

Keywords

women, young people, employment, pandemic

The beginning of the 2001 war in North Macedonia until the Prizren agreement - May 2021 according to the British press

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Abstract

The outbreak of the 2001 war in northern Macedonia came as a surprise to both the state apparatus and the international community. Even though the status of Albanians was not yet legally defined in the country, it was considered that the state was stable and there was apparently no room for any eventual conflict. From mid-February 2001, when the conflict erupted and until the so-called Prizren Agreement between representatives of Albanian political parties in northern Macedonia and the political leader of the National Liberation Army, mediated by the OSCE Ambassador, political developments were blurred and unknown. The British press regularly followed military and political developments on a daily basis during this period of time. Of course, such a report would also reflect the creation of the political opinion of the population on the events in Northern Macedonia though the same would reflect that of British and world policymakers. The analysis is done in this paper exclusively on the basis of the British press.

Keywords

North Macedonia, 2001 war, British press, international mediators, political opinion.

The reforms in public administration , one of the conditions for integration to the european union

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Abstract

Reforms in the public administration occupy an important role among other priorities of a country aspiring for membership and EU integration. Not that integration depends on public administration reforms, but it's the quality of reforms that accelerates the pace and strengthens a country's road towards EU integration. The basic idea is to prove that there is a connection between these two elements or procedures on one hand, and on the other the process of integration of Republic of North Macedonia into EU depending on the public administration reform. This means that the more effective reformation of public administration the RNM has made, the shorter term of meeting the conditions for EU integration it will take.

From the very beginnings of the independence of the Republic of North Macedonia a lot of importance and value has been given to adjusting reforms in accordance to the new pluralist democratic conditions and those of the economy. Up to 1999, when the process of reforms was incited, a very small part of these specific engagements was accomplished in terms of improving the functionality of the public administration. The main goal to be reached through the implementation of the reforms in the RNM is the development of a democratic society and the development of the economy. The reforms in the public administration take a very important role among other priorities of a country that aspires to become a member and integrate in the EU. The integration does not depend on public administration reforms, but the quality of reforms does accelerate the tempo and strengthens the road of a country towards EU integration. The basic idea is to prove that there is a correlation between these two elements or procedures. The process of integration of RNM into the EU is very much dependable, among other things, also from the public administration reforms and if the Republic of North Macedonia manages to conduct an efficient reformation of the public administration, it will comply with EU integration criteria faster.

Keywords

administration, reform, European Union, integration

International legal framework for the protection of human rights - the right to migrate

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Abstract

The realization of the protection of the human dignity of all human beings lies at the core of the concept of human rights, putting the individual at the center of attention. Understanding human rights principles and procedures enables people to participate in social decisions that affect their lives to act towards resolving conflicts, improving living standards and enabling an environment of prosperity. The struggle for human rights begins with the effort to recognize his fundamental rights: the right to life and liberty, equality, security and the right to resist the oppressor. These same rights were traditionally treated as matters of internal competence and their regulation was done by laws, declarations or constitutions. They were transferred to the international arena after the Second World War in a new sense, that only international recognition and protection of human rights can be an obstacle to avoid repeating the crimes and violence that has been committed. Human rights have to do with the right which is protected by law and freedom and equality between people. We find this in the first article of the Universal Declaration of Human Rights: all human beings are born free and equal in dignity and rights. Human rights are expressed in international agreements, signed and ratified by states, with the clear aim that these rights are guaranteed to all people within the jurisdiction of states. The right to migrate from one country is the right to leave a state and its institutions and go elsewhere, where the same human rights may or may not be guaranteed. Human rights, by their very nature, cannot be taken from one person and transferred to another, therefore they must be guaranteed to all persons present in a state, including migrants, regardless of their legal status or duration of stay. They should be applied without discrimination, which means that there should be no reason to derogate or ignore fundamental rights and freedoms, where the most important ones are:

- The right to life
- Prohibition of genocide
- Prohibition of slavery
- Prohibition of torture, inhuman and degrading treatment
- Prohibition of racial and systematic discrimination
- The right to self-determination
- The right to humane treatment during the period of detention
- Prohibition of retroactive criminal laws
- The right to equality before the law
- Non-discrimination
- The right to leave or return from/to the country of origin
- The principle of non-return

Keywords

Universal Declaration of Human Rights, protection of human rights, migration, rights of migrants

The impact of e-learning during the pandemic of Covid-19

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Abstract

Online learning is one of the most important option to educate students during the Covid-19 pandemic and the new normal period. This learning has been implemented at various levels of education with various platforms.

Objective: The main purpose of this study is to identify the effects of online learning. The specific objectives that were achieved through this study are:

- To analyze the role of online learning in education.
- To compare methods and studies.

Method: This study is a meta analysis, literature review of 5 literature review of the last year. All studies have a major focus on the impact of online learning and problems that this option faced during the pandemic. Data are extracted from 6 medical data bases. The results that came from this data were compared with a questionnaire that was completed online from 20 students

Results: According to this literature review that 50% of studies claimed that the major challenges encountered by learners in online learning were technical issues like internet connectivity problems, accessing classes, and downloading courses' materials problems. 25% of studies claimed a very big fatigue among teachers and students because staying with long hours online in front of computer and the light caused headache, eyes irritation, while 25 % of studies claimed that online education was a good way for expanding the provision of internet access and online library resources and it is not necessary to go to university to study while we can do it online.

Conclusion: After analyzing and discussing the selected literature, we conclude that learning online was a temporary adaptive way of learning during pandemic. Scientific research on this topic is limited, so it is suggested to increase research by different authors.

Keywords

pandemic, learning online, education, motivation, internet issue

Migration, economic challenges and protection of human rights

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Abstract

This review summarizes main trends, issues, debates, actors and initiatives regarding recognition and extension of protection of the human rights of migrants. Its premise is that the rule of law and universal notions of human rights are essential foundations for democratic society and social peace. Evidence demonstrates that violations of migrants' human rights are so widespread and common place that they are a defining feature of international migration today. Evidence on globalization points to worsening migration pressures in many parts of the world. Processes integral to globalization have intensified disruptive effects of modernization and capitalist development, contributing to economic insecurity.

Not every aspect of migration is beneficial for developing countries. Migration may impose a high cost for developing countries by leaving the country without the human capital necessary to achieve long-term economic growth.

While migration impacts development, economic conditions are important drivers of migration. People migrate for a variety of reasons including the search for better economic opportunities, education, family reunion and escaping violence. People often migrate for a combination of these and other reasons. However, the expected income gap between developed and developing countries is a strong incentive for people to migrate. As such, migration affects development, but development also affects migration.

Under the Universal Declaration of Human Rights (created fifty years ago), human rights are universal (they apply everywhere), indivisible (political and civil rights cannot be separated from social and cultural rights); and inalienable (they cannot be denied to any human beings). However, their de facto extension to many vulnerable groups has been a long and difficult process, by no means complete. Migrants and indigenous persons, in particular, experience strong resistance to recognition of their human rights.

Keywords

globalization, Migration, human rights, economic opportunities.

Occupational health and Safety and Infection Control among

Dentists in the University Dental Clinical Center and Private Dental Clinics in Skopje, North Macedonia

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Abstract

Aim: assessment and comparison of knowledge, attitude, and practice (KAP) on dental infection control (IC) and occupational safety among dentists in private dental clinics and the University Dental Clinic Center, in Skopje, North Macedonia.

Methods: Data were collected cross-sectionally with a self-administered questionnaire consisting of 97 variables. The study population comprised all dentists/faculty who worked at the University Dental Clinic Centre “St. Pantelejmon” (UDCC) and a convenience sample of dentists who worked in private dental clinics (PDCs).

Results: The Questionnaire was completed by 188 subjects, 45.7% worked in UDCC and 54.3% in PDCs. More than 90% of all dentists were aware of the risk of transmission of bloodborne pathogens in dental settings and recognized the need for mandatory training on IC. Merely 20% attended continuing education on the subject, a higher percentage did not have written programs for IC in their workplace, were not vaccinated against Hepatitis B virus, and did not feel comfortable treating patients with infectious diseases (IDs). Around 40% answered correctly that critical and semi-critical instruments must be sterilized and only around 20% always sterilized handpieces between patients. Dentists in UDCC showed a significantly higher level of knowledge about potential transmission of infections in dental clinics. Whereas, dentists in PDCs were more likely to use eyewear and face masks, and to refuse care for patients with IDs.

Conclusion: There is a great need to improve dental IC in North Macedonia. Development of national standards, continuing education and training on IC and safety for dentists is highly recommended.

Keywords:

Infection control, dental clinics, dental school, knowledge, attitudes, practices, North Macedonia

Testing Statistical Hypothesis on Learning Effectiveness: pre- and post-COVID 19

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Abstract

This paper raises the question: “Is there a statistically significant relationship between traditional teaching and online teaching related to learning effectiveness?” In this aspect, the purpose of this study is to compare students’ achievements in the same subject before and during the health crisis and to draw conclusions if there is any statistically significant relationship between the two methods of teaching and learning effectiveness. Furthermore, if any relationship was found, the aim is to assess how the opportunities provided by the Internet can develop and improve the terms of learning and teaching in the future.

The statistical analysis of data is done after more than a year of online teaching and learning which means that it is the right time to assess the opportunities and threats of Covid -19 in the sphere of education.

This paper investigates and compares the performance records of students in the subject of Monetary Policy in the academic year 2019-2020 and 2020-2021. At the Mediterranean University of Albania, the course is developed in the first semester of the second year in Bachelor Cycle in Economic Science. During the academic year 2019-2020, the teaching was done in a classic method and took place in the auditorium while in 2020-2021 the teaching was developed on the Google Classroom platform.

This paper analyzes through descriptive statistics and by testing hypothesis (Chi-Square) the impact of each method in learning effectiveness. The study does not include in analysis psychological and social factors that influence the way of teaching and learning. As a conclusion, we found a statistically significant relationship between the teaching method and students' grades.

Keywords

education, Covid-19, learning effectiveness, “new Normal”, testing hypothesis, statistics

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Abstract

Environmental protection and pollution are globally gaining visibility among the general public, especially in the last decade. The media have substantial power in terms of environmental awareness raising and significant influence in creation of public opinion for environmental challenges. This paper deals with the presence and treatment of environmental issues in printed media in Macedonia. The frequency of articles, their structure, analytical level and area of interests, are analyzed via the research of the content of three Macedonian daily papers. The main findings show that environmental issues are present with less than 1% in the overall newspapers content. Moreover, very often the articles are not firmly elaborated. The core of the problem is rarely explained. In addition, the environmental topics in printed media are often misused for political promotion in affirmative and positive articles. There is lack of objective environmental analyses useful for problems solving. Thus, additional efforts are required for raising the public awareness for environmental topics, as well as for strengthening the capacities of the journalists.

Keywords

Environment, Media, Awareness

