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# BOOK OF ABSTRACTS

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**CONFERENCE ON  
BUSINESS, TECHNOLOGY  
AND INNOVATION**

**2022**



# BOOK OF ABSTRACTS

From:  
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**Chapter:** Management, Business and Economics  
**Chapter:** Information Systems  
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**Chapter:** Energy Efficiency Engineering  
**Chapter:** Mechatronics, System Engineering and Robotics  
**Chapter:** Computer Science and Communication Engineering  
**Chapter:** Architecture and Spatial Planning  
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**Chapter:** Psychology  
**Chapter:** Modern Music, Digital Production and Management  
**Chapter:** Art and Digital Media  
**Chapter:** Dental Sciences  
**Chapter:** Medicine and Nursing  
**Chapter:** Language and Culture  
**Chapter:** Sport

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## **Editor Speech of IC - BTI 2022**

International Conference is the 11th international interdisciplinary peer reviewed conference which publishes works of the scientists as well as practitioners in the area where UBT is active in Education, Research and Development. The UBT aims to implement an integrated strategy to establish itself as an internationally competitive, research-intensive institution, committed to the transfer of knowledge and the provision of a world-class education to the most talented students from all backgrounds. It is delivering different courses in science, management and technology. This year we celebrate the 21th Years Anniversary. The main perspective of the conference is to connect scientists and practitioners from different disciplines in the same place and make them be aware of the recent advancements in different research fields, and provide them with a unique forum to share their experiences. It is also the place to support the new academic staff for doing research and publish their work in international standard level. This conference consists of sub conferences in different fields: - Management, Business and Economics - Humanities and Social Sciences (Law, Political Sciences, Media and Communications) - Computer Science and Information Systems - Mechatronics, Robotics, Energy and Systems Engineering - Architecture, Integrated Design, Spatial Planning, Civil Engineering and Infrastructure - Life Sciences and Technologies (Medicine, Nursing, Pharmaceutical Sciences, Psychology, Dentistry, and Food Science),- Art Disciplines (Integrated Design, Music, Fashion, and Art).

This conference is the major scientific event of the UBT. It is organizing annually and always in cooperation with the partner universities from the region and Europe. In this case as partner universities are: University of Tirana – Faculty of Economics, University of Korca. As professional partners in this conference are: Kosova Association for Control, Automation and Systems Engineering (KA – CASE), Kosova Association for Modeling and Simulation (KA – SIM), Quality Kosova, Kosova Association for Management. This conference is sponsored by EUROSIM - The European Association of Simulation. We have to thank all Authors, partners, sponsors and also the conference organizing team making this event a real international scientific event. This year we have more application, participants and publication than last year.

Congratulation!

Edmond

Hajrizi,

Rector of UBT and Chair of IC - BTI 2022

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# 11<sup>th</sup> International Conference

Chapter: Management, Business and Economics

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# Effects of corporate financial distress on peer firms during COVID-19 in an emerging economy: Insights from Kosova

Blinera Sylejmani  
blinerasylejmani1992@gmail.com

**Abstract.** The onslaught of the COVID-19 pandemic has had a critical impact on some firms in an industry affect the conditional accounting conservatism of intra-industry non-distressed firms. We hypothesize that the lenders of non- distressed firms perceive higher riskiness and the need to take on debt, when some firms show signs of financial distress in that industry. Intra-industry non distressed firms increase their levels of analyses of debt covenants and more efficient monitoring of debt contracts. In such a context, the research develops a model to analyze the impact to meet the lenders' demands for stricter monitoring of debt contracts and to reduce debt costs. We provide new evidence for the spillover effects of financial distress within an industry and the usefulness of debt as a form to improve their sustainability. Results are based on a sample of 40 firms during December 2020-January 2021.

**Keywords:** Financial distress, costs of debt, Covid 19

# The role of technology during the pandemic - case study workers of the health and education sector in Kosovo

Bardha Mulhaxha 1

1 UBT – Higher Education Institution, Lagjia Kalabria, 10000 p.n., Prishtinë, Kosovo

bardha.mulhaxha@ubt-uni.net

**Abstract.** Purpose: The importance of technology in our lives is becoming greater every day, thus turning into something necessary for normal functioning in every activity. The pandemic and social distancing have affected all spheres of society, especially education and health. When everything stopped working properly, the entire burden fell on learning development and medical check-ups. The purpose of this work is to analyze how much information systems have been used by these two sectors, how much they think it has been effective and whether age has influenced the access of these used systems as a limitation. Design/methodology/approach: This paper uses data extracted from a questionnaire which was addressed to 30 respondents from the health and education sector. The extracted data was analyzed through the software application for statistical analysis SPSS (IBM Analytics) doing so comparisons between sectors and highlighting the role of technology during the pandemic in the aforementioned sectors. Findings: From the research, we have seen that the use of information systems during the pandemic has been very effective, making many activities easier to carry out, especially in the education and health sectors. We have also seen that older employees have had hardly use technology as a tool to perform their tasks. Limitations/Implications of the research: The limitation of this paper is related to the fact that the questionnaire was distributed during the pandemic and that most of the older staff were not present in the workplace. I consider that after the end of the pandemic and the total return to normality, the importance and role of information systems will be seen even better. Originality/Value: This study will be of practical importance to see how challenges are overcome through technology, when everything else is limited and beyond human control.

**Keywords:** Information systems, Health, Education

# **Inflation and Impact on the Cost of Living - The Case of Kosovo**

Agim Berisha 1

1 Business College, Faculty of Economics  
agim.berisha74@hotmail.com

**Abstract.** Within the framework of the paper, inflation is treated, including the impact on the consumption of family economies in Kosovo. An important indicator in the economy of a country is inflation. The Covid19 pandemic, among other things, has also affected the economic processes in different countries of the world, as well as having an impact and effects on the economic processes in Kosovo. In addition to inflation or the indicator that measures the cost of living, in this context the consumer price index is used to monitor changes in the cost of living over time. The main goal consists in the analysis of the progress of inflation in Kosovo in recent years. So the purpose of the consumer price index is to measure changes in the cost of living. In the framework of this study, to achieve the objectives, the analysis method, tabular and graphic separately, comparative methods are used, analyzing the dynamics of the issue related to inflation and the impact on the cost of living. Through this study, we consider the results and recommendations given to be taken into consideration by the relevant institutions.

**Keywords:** Inflation, consumer price index, consumption, economic processes.

# The Impact of Digital Economy and Industrial Structure on Green Total Factor Productivity in China

WangJue, Lv Desheng <sup>1</sup>

<sup>1</sup> School of Economic & Management , Northwest University , Xi'an 710127

wjueba@126.com

**Abstract.** The digital economy is a new driving force and engine of industrial transformation and economic development to improve quality and efficiency. This paper focuses on the green value of the digital economy. Based on measuring urban green total factor productivity (GTFP) through the SBM model, using panel data of 281 prefectural-level cities in China from 2011- 2019, to examine the impact of the digital economy on GTFP and its underlying mechanisms in a multidimensional manner using high-dimensional fixed effects, mediating effects, threshold effects, and double-difference models. The study finds that the digital economy can directly promote GTFP and release GTFP dividends through the rationalization and advancement of industrial structure. This conclusion still holds after robustness tests such as selecting historical data as instrumental variables and "smart city" pilots as quasi-natural experiments. Further research finds that the digital economy can better promote GTFP in declining, regenerative, and non-resource-based cities. Threshold regression results verify the nonlinear effect characteristics of the digital economy.

**Keywords:** digital economy; industrial structure; green total factor productivity; smart city  
JEL

Classification:O13;O33;Q56

# Control Environment as an Element of the Coso Framework AR (1) Model Vs IV-GMM Model Case Study Republic of Kosovo

Gresa Mjaku Krasniqi 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n.,  
Prishtinë, Kosovo

[gresa.mjaku@ubt-uni.net](mailto:gresa.mjaku@ubt-uni.net)

**Abstract.** The need to clarify the factors and processes that combine to build effective internal control systems was recognized in the United States of America by the Committee of Sponsors of Organizations of the Treadway Commission (COSO). Concerns were also raised about the impact of fraudulent finance, fraud on auditing standards, and most importantly, a wider understanding of financial control was needed. Since the COSO framework is considered to be the foundation of the modern control approach, in September 1992, COSO published another report entitled "Integrated Internal Control Framework", which was then republished in 1994 with some changes small. As a result, the COSO framework identifies five key components of internal control. The importance of this research is to look at the impact of one of the five elements of the COSO framework, which is Environmental Control, as well as to see which has the most impact on the good management of public funds in the case of Kosovo. Control Environment has 5 (five) principles, namely: (1) commitment to integrity and ethical value; (2) responsible oversight; (3) the determination of structure, authority and responsibility; (4) commitment to competence; (5) enforcement of accountability. We use the statistical method of evaluating the instrumental variables (IV) with the exact "Generalized Method of Moments (GMM)" for the primary data. As for the model for secondary data, we have used the "Autoregressive Model of order (1)" or "AR (1) Model" in our research. It turns out that the Control Environment as the first element in the COSO framework from the primary data ordered by the IV-GMM model has an impact on the good management of funds in the case of the Republic of Kosovo. Whereas from the secondary data in this regression model, the order of an auto-regression is the number of immediately previous values in the series that are used to predict the value at the present time and from the second model that the financial budgets of some Institutions are taken and are analyzed for a period of 20 years with the help of time series, it turns out that the control environment has an impact on the good management of funds.

**Keywords:** COSO framework, Environmental Control, IV-GMM Model, AR (1) Model, Performance, Public Sector, Republic of Kosovo.

# Understanding Generational Marketing

Nora Sadiku-Dushi <sup>1</sup>[0000-0003-0367-1187] and Afërina Skeja <sup>2</sup>[0000-0001-9042-7910]

<sup>1</sup> University for Business and Technology, Pristina, Kosovo  
[nora.sadiku@ubt-uni.net](mailto:nora.sadiku@ubt-uni.net)

<sup>2</sup> University for Business and Technology, Pristina, Kosovo  
[afarina.skeja@ubt-uni.net](mailto:afarina.skeja@ubt-uni.net)

**Abstract.** Market segmentation is one of the most important strategies that marketers use to better understand their customers. There are usually geographic, demographic, socioeconomic, psychographic, and behavioral variables that are used in market segmentation. The most common and simplest market segmentation is demographic segmentation, which divides the whole market into smaller parts based on different demographic factors such as gender, age, income, education, or occupation. This segmentation assumes that people with the same demographic characteristics have similar needs, wants, and preferences for products. Lately, besides these demographic variables, many marketers have started segmenting the market based on the different generations. Today, this strategy is known as generational marketing, and it means dividing the market based on the age group that forms a generation. A generation is considered a group of individuals that are born in the same period and therefore they grow up in similar economic and political conditions which makes them share similar values and preferences. Based on the literature review methodology the main objective of this paper is to offer a theoretical overview of what generational marketing is, what are the characteristics of each generation and how generations differ in their purchasing behavior. The paper will also provide future research directions.

**Keywords:** Segmentation, Generational Marketing, Purchasing behavior



# **Individual Behaviour and Team Management**

## **Case: Commercial Bank in Kosovo**

Ardian Uka

UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

Ardian.uka@ubt-uni.net

**Abstract.** The purpose of this paperwork is to analyse Individual and Team Behaviour within the various environment and particularly effect within organisation respectfully at the Commercial Bank in Kosovo. This paperwork will present generally analysis of Individual and Team Behaviour and the effect towards firm strategy. This paperwork is compiled based on research and credibility of material, which has been approached in different kinds of sources: primary, secondary and tertiary. Therefore, in addition to wide information/sources needed, also there has been interviews and discussion with Commercial Bank officers in Kosovo, Central Bank of Kosovo and Kosovo Chamber of Commerce. By the end of this paperwork, the reader will be able to Understand Individual Behaviour and the concept of teamwork and team management its impact in any organisation and especially at Commercial Bank in Kosovo. Author (2006) states: “By our self we are all individuals and our behaviour is based upon our interest/needs. However in team we are again individuals but influenced by others individuals, therefore in team we behave accordingly to the team interest/needs too - whereas no one can say that there is a right or wrong”

**Keywords:** individual behaviour, team behaviour & management.

JEL classification codes: C91, C92, M12.

# Are social networks helpful for enterprises?: A literature review

Afërina Skeja<sup>1</sup>[0000-0001-9042-7910] and Nora Sadiku-Dushi<sup>2</sup>[0000-0003-0367-1187]

<sup>1</sup>University for Business and Technology, Pristina, Kosovo  
[afarina.skeja@ubt-uni.net](mailto:afarina.skeja@ubt-uni.net)

<sup>2</sup>University for Business and Technology, Pristina, Kosovo  
[nora.sadiku@ubt-uni.net](mailto:nora.sadiku@ubt-uni.net)

**Abstract.** With the rapid development and spread of the Internet, the use of social networking is also becoming widespread. Social networks, which are now an integral part of businesses, can especially help entrepreneurs survive and develop. Entrepreneurs follow both national and international markets closely through their social networks and it becomes easier for them to take an active role in these markets. Social networks have become the most important factor in increasing the performance of entrepreneurs. In addition, social media helps entrepreneurs to have the necessary resources, knowledge, power, and opportunities for establishing their businesses. The way entrepreneurs are affected by environmental structures in this process is examined by different disciplines via different approaches. In this study, entrepreneurship and social networks are discussed and the way entrepreneurs are affected by social networks is evaluated in terms of management, and studies in this field are examined.

**Keywords:** Social Networks, Enterprises.

# Business Environment and Foreign Direct Investment in Western Balkan Countries

Mustafe Hasani 1 and Blerina Hasani

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[mustafe.hasani@ubt-uni.net](mailto:mustafe.hasani@ubt-uni.net)

**Abstract.** This paper is an attempt to estimate the relationship between foreign direct investment inflow and improving the business environment via ease of doing business indicators. The research aims to explore statistically significant linkages between improved overall World Bank rankings and inward foreign direct investment inflow performed on a sample of six Balkan countries: Albania, Bosnia and Herzegovina, Montenegro, Northern Macedonia, Kosovo, and Serbia. The hypotheses are formulated and basic tests are performed on data from the World Bank's Doing Business official rankings from 2010 to 2020. The empirical data tested via multiple regression using the stepwise method show that an improved overall ranking has, on average, an insignificant influence on foreign direct investment inflow. On the one hand, the results of testing 10 World Bank Doing Business indicators show that only improvements in protecting minority investors and trading across borders have an impact on foreign direct investment inflows. On the other hand, the results of the Pearson correlation coefficient test show that the level of corruption in the host country has a statistically significant negative correlation with foreign direct investment inflow. Furthermore, the study shows that the six countries that were analyzed from the Western Balkans region managed to achieve appropriate levels of improvement in regulatory reforms in the ease of doing business rankings; however, these countries have not been successful enough in attracting foreign investments. Therefore, this paper can inform policymakers who, in addition to the regulatory reforms of the ease doing business index, advocate drafting relevant strategies in the hope of attracting foreign direct investment inflow.

**Keywords:** FDI, ease of doing business rankings, Balkan countries.

# **Economic Implications of the Open Balkan initiative on macroeconomic relations and labor market developments in the Western Balkan countries. Challenges and Perspectives**

Bardhyl Dauti 1 and Ruzhdi Matoshi 2

1 University of Tetovo, Tetovo, North Macedonia

2 University of Business and Technology, Prishtina, Kosovo

**Abstract.** The delayed European Union (EU, hereafter) enlargement agenda toward Western Balkan countries (WBC, hereafter) shaped the EU approximation path of some of the WB countries by exploiting alternative solution for regional integration. In this coherence, the leaders of Albania, North Macedonia and Serbia, on October 2019, decided to take destiny in their own hands by launching an idea for establishing a ‘‘mini shengen’’ regional integration policy, which lately in July 2021, progressed into ‘‘Open Balkan’’, covering mainly the unintegrated WB countries into EU, like Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo. Furthermore, Serbia, being potentially at the center of the geopolitical regional pole of the Open Balkans initiative, additionally increases the sensitivity of other Western Balkan countries, like Kosovo, for instance, for not entering into this regional structure, especially considering the open political dispute between Serbia and Kosovo, related mutual recognition. This policy-oriented paper will rely on a descriptive framework of the macroeconomic and labor market developments in the Western Balkan countries in-between WB countries and between the WB and EU countries. More specifically, labor market developments as well as trade and FDI links and developments in the remittances between the WB countries and EU countries, will be the focus of this study, shedding light on potential perspectives of the Open Balkan agreement with respect to enhancing labor mobility and economic ties between countries. Based on a backward looking perspective macroeconomic data, covering in principle the last 10 years, the paper finds out that economic ties on the grounds of FDI, Trade, Labor Market and remittances are more severe between WB and EU countries, rather than in between WB countries by itself, hence, making the initiative of the Open Balkan fragile on economic sense and imperfect substitute for EU integration agenda.

**Keywords:** Open Balkan, EU integration, Western Balkan Countries.

# **The Impact of the Business Planning On The Company Performance- Empirical Evidence Of Kosovo SMEs**

Enver H. Krasniqi <sup>1</sup>, Dea Krasniqi and Lorik Abdullahu

<sup>1</sup> UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

enver.krasniqi@ubt-uni.net

**Abstract.** The biggest challenge facing companies today is the ability to manage the constant changes that occur in technology and industry, the ability to stimulate innovation and creativity and at the same time the ability to plan and lead the business while facing internal and external challenges. Nowadays, the phenomenon of entrepreneurship is growing more and more. Many young people are preferring to start their own business thus increasing the number of new businesses and entrepreneurs. However, many businesses fail to survive for the sole reason that in their infancy they fail to develop an effective plan. There are many such entrepreneurs who start their business without any specific plan, and this can lead to spending time and high costs. Without a business plan, the owner finds it difficult to keep the business focused and may not know if the business is going in the wrong direction. A business plan clearly defines the mission, values, strategies, measurable objectives and key expectations or results from the business. A business plan is a document in which a business opportunity, or an already developing business, is identified, described and analyzed, examining its technical, economic and financial feasibility. The business plan develops all the necessary procedures and strategies to turn the business opportunity into an actual business project. Preparing a business plan is an important “tool” to start a new business. A business plan is the key to securing finances, maintaining focus, and planning for the unexpected. But just writing a business plan is not enough; it is important to implement it meticulously to lead the business to success. The purpose of this paper is to contribute to the entrepreneur’s awareness about the perception of the importance of the business plan by providing an overview that describes in chronological order the steps to be followed to achieve a well- designed business plan to help new companies achieve of successes. Through this topic the main goal is to reach the conclusion of an overview of the impact of the business plan on the successful process of planning and operation of a new business. To see how much Kosovar businesses are aware of the business plan and how many of them had one before the start of their activity, and at the same time how much the latter manages to influence the success of the company, a research survey has been formulated. submitted to a group of randomly selected Kosovar companies. The survey contains a total of ten questions and is sent electronically to companies. The research has managed to identify the main problems faced by young Kosovar companies regarding the development, planning and implementation of a proper business plan in bringing and developing innovations.

**Keywords:** Business, SMEs, Venture, Planning, Success. Performance.

# The Impact of Digital Technology on Business Internationalization: The Raising Challenges and Disputes in Uncertain Times

Ylber Limani<sup>1</sup> and Albiona Osmanaj<sup>1</sup>

<sup>1</sup> UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[ylber.limani@ubt-uni.net](mailto:ylber.limani@ubt-uni.net) , ao44458{ @ubt-uni.net }

**Abstract.** This research work discusses and analyses the impact of digital technologies on the internationalization of businesses, focusing on case studies of developed and underdeveloped countries such as Kosovo. The research took place during the period of the COVID-19 pandemic considering it a powerful game changer in business terms. There are different ways to understand that digitalization is a special contributor to the development and growth of an enterprise in international markets. Therefore, many companies are paying special attention to the implementation of digital technologies in their enterprises, and have even begun to consider their use as a business model. Businesses are leaning toward the belief that implementing digital technologies enables them to create better relationships with their customers and suppliers, streamlining business operations as well as structuring and incentivizing better performance across all business industries. In businesses with stronger bases, the use of digital technologies is essential, while in smaller businesses the situation is a little different, considering that the knowledge of the application of digital technologies is the same. Consequently, this research is focused on observing and measuring the impact of digital technology on the internationalization of Kosovar businesses. Digital technologies, their use, the various trends in digitalization, the challenges faced by businesses, the global economy, Covid-19 and the impact on internationalization are some of the points examined and researched in more detail regarding the process of business operations during uncertain times.

**Keywords:** Artificial Intelligence, Digital Technologies, Internationalization, Uncertainty, Pandemics.

# Gender-based differences in access to finance: A firm- level analysis

Arta Mulliqi 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë, Kosovo

arta.mulliqi@ubt-uni.net

**Abstract.** Gender-based discrimination in access to finance has become an issue of particular importance for scholars, and a major concern for policymakers. In many countries, women entrepreneurs face impediments and discrimination arising from various cultural and socio-economic factors. The aim of this paper is to assess the role of gender in securing external finance, controlling for an array of firm-specific characteristics, along with industry and country variables. The empirical analysis is conducted using firm-level survey data from the transition region of Central and Eastern Europe and Central Asia. To explore if women-led firms are more credit constrained than those led by men, several measures of access to finance are employed. To assess the robustness of the estimates, a diversified modelling strategy is adopted. Results from the regression analysis suggest that having a woman top manager decreases the probability of getting a line of credit or loan from a financial institution. The empirical findings also reveal that firms managed by women are less likely to apply for external finance than those managed by men.

**Keywords:** Gender, Discrimination, Finance, Transition economies

# Cyber Security in Online Shopping

Mirjetë Mazreku 1[0000-0000-0000-0000] and Nora Sadiku-Dushi 2[0000-0003-0367-1187]

1 University for Business and Technology, Pristina, Kosovo

mm50735@ubt-uni.net

2 University for Business and Technology, Pristina, Kosovo

nora.sadiku@ubt-uni.net

**Abstract.** Today it is impossible to imagine the world without the internet. Whether we want to admit it or not, the internet has become an integral part of Everyone's life. Digitization has eased many aspects of life such as communication, shopping, and even socializing. But, the use of the benefits offered by digitization also has the other not so "bright" side, the side of exposing users data on the internet. Thus, no matter if a user is purchasing, communicating, or doing any other activity on internet the user's data is exposed online. This paper provides guidelines for cyber security to improve customer confidence in online shopping as well as an analysis of buyers' perceptions of security and privacy issues in online shopping. Therefore, the purpose of this research is to understand whether online shoppers are concerned about the privacy of their data and whether they are familiar with cybersecurity concepts. Based on the quantitative methodology the data were collected by fully structured questionnaires from a sample of 46 respondents. The findings revealed that most of the online buyers in Kosovo are sufficiently informed about cyber security and they trust online shopping. In the end, the paper offers recommendations for raising awareness about cyber security and online shopping.

**Keywords:** Cyber Security, Online Shopping, Threats, E-Commerce



# The Impact of Digital Technology Implementation on the Improvement of Business Operations

Ylber Limani 1 and Arbnora Sadiku 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,

Kosovo

[ylber.limani@ubt-uni.net](mailto:ylber.limani@ubt-uni.net) , as47372{@ubt-uni.net}

**Abstract.** The operations improvement process is a continuous examination method that ensures the businesses are maintaining efficiency while minimizing ineffective activities. Continuing the competitive advantage of businesses is not conceivable without the application of the right digital technology. This paper discusses the impact of digital technology on the improvement of business operations and the quality of products and services. The study seeks to find out the correlation between the main phases of operations quality improvement and the application of digital technology in each of the phases. Accordingly, the included phases are process design; change management; data management; and gap analysis. Operations quality improvement is supposed to be a data-driven process and requires a quantitative approach mixed with qualitative rudiments. Quantitative research involves the application of survey research including local businesses from different industries. The results are expected to show there is a significant relationship between hypothesis constitutive variables.

**Keywords:** digital technology, quality, business process, operations improvement, management.

# The Impact of Change Management on Digital Transformation of Financial Institutions

Ylber Limani 1 and Emira Klinaku 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,

[ylber.limani@ubt-uni.net](mailto:ylber.limani@ubt-uni.net) , ek48270{ @ubt-uni.net }

**Abstract.** Change management can be considered one of the most difficult management processes that a company can perform. But, in recent times when technology is determining many processes and systems, it has become easier to manage business change. This paper discusses and investigates the relationship between change management and digital leadership in financial institutions. Change management and digital leadership are two business terms that seem not strongly related at first glance. However, their association is very significant. It is assumed that change management is an important methodical approach to transforming business strategy, business processes or deployed technologies. Nonetheless, only in the cases when change management is implemented successfully, it enables the leadership to correctly apply the digital transformation of businesses and institutions. Consequently, it is supposed to change management affects the improvement of the business process in financial institutions. Diverse research methods are applied in this research. Quantitative methods include survey research carried out in two different financial institutions.

**Keywords:** change management, digital leadership, financial institutions, digital technologies,

# The Impact of The Covid-19 Pandemic on Retail Sales Through Electronic Commerce in Kosovo

Rajan Arapi 1 and Alban Gojani 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[rajan.arapi@ubt-uni.net](mailto:rajan.arapi@ubt-uni.net) , [ag31220@ubt-uni.net](mailto:ag31220@ubt-uni.net)

**Abstract.** E-commerce is seen as the next step in doing business, especially for retail. As the name implies, e-commerce is the buying and selling of goods and services, or the transaction of funds or data, through a large electronic network on the Internet. The year 2020 has faced us with one of the most serious health disasters in the last 100 years of human society. The pandemic situation caused by the COVID- 19 virus has disrupted almost all economies of the world, including that of Kosovo.. But, e-commerce has experienced tremendous development, beyond any case, throughout the pandemic period. This has also been evidenced in Kosovo starting from many businesses that operate exclusively on online channels such as social media and websites specializing in e-commerce. But the new and underdeveloped e-commerce infrastructure in Kosovo has encountered some problems, such as poor security of customer data, poor quality of services, backward logistics of shipping, etc. Some of the consequences encountered during the pandemic are the increase in the number of first time buyers, the increase in the volume of purchases as well as a better understanding of e-commerce by consumers. This is essential for e-commerce to develop in the right way and for consumers to be more educated about e-commerce in Kosovo. Google Forms was used to collect the answers of the respondents, while the SPSS software was used to analyze and present the results.

**Keywords:** E-commerce, pandemic COVID-19, electronic network.

# **The role of the Internal Auditor in public Institutions: Case study KRU “HIDRODRINI” SH. A, Peja**

Ardiana S. Ahmetaj 1 and Gresa Mjaku Krasniqi 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

gresa.mjaku@ubt-uni.net, aa50470@ubt-uni.net

**Abstract.** This study is an empirical analysis of the role of internal audit in an effective management control in public enterprises. It examines whether the effectiveness of the internal auditor plays a role in ensuring effective management in the public sector and whether the effectiveness of the internal auditor affects the increase in performance in the enterprise KRU “HIDRODIRNI” SH. Ah, Peja. Internal audit in public enterprises plays an essential role in increasing the efficiency of governance, developing an administration with integrity and improving transparency. The general objective of this paper aims to show that the audit increases the quality of information of the audited financial statements helping to increase the efficiency of the company. The results from the secondary data for the period 2017-2021 in the enterprise KRU “HIDRODIRNI” SH. A. Peja, show that Internal Au-ditors with their opinions and recommendations can positively influence the im-provement of the performance of public enterprises.

**Keywords:** Internal Audit, Public Enterprises, Performance, KRU “HIDRODRINI” .

# Characteristics of Social Entrepreneur: the Case of Bulgaria

Vyara Kyurova 1 and Blagovesta Koyundzhiyska-Davidkova 2

1 South-West University “Neofit Rilski”, Blagoevgrad, Bulgaria

2 South-West University “Neofit Rilski”, Blagoevgrad, Bulgaria

vyara.kyurova@gmail.com

vesi\_8808@abv.bg

**Abstract.** Social entrepreneurs identify the problems in society and try to solve them. They try to overcome the gap between the business and the public sectors. Moreover, social entrepreneurs often are willing to take the risks associated with their venture to help addressing and enabling positive change in society and often need to make sure that their ideas are easily understandable. In modern conditions, it is precisely the knowledge and possession of various characteristics of the social entrepreneur that are important for achieving success in business. In this context, the purpose of the report is to study and analyze the main and additional characteristics of the social entrepreneur willing to start a business in Bulgaria. The inherent characteristics of the social entrepreneur have been clarified from a theoretical point of view. The primary data was collected through a survey, which was distributed to 84 persons who want to start social entrepreneurial business. The survey was conducted between May-June 2022 in Bulgaria. Based on the results of the analysis, general conclusions were drawn.

**Keywords:** Social Entrepreneur, Characteristics, Social Entrepreneurship

# Digital Transformation in Small and Medium-Sized Enterprises in a Time of a Crisis

Anita Kyurova 1

1 South-West University “Neofit Rilski”, Blagoevgrad, Bulgaria  
anita.d.kyurova@gmail.com

**Abstract.** The Covid-19 pandemic presents small and medium-sized enterprises with serious challenges. It leads small and medium-sized enterprises to search for new solutions for survival and development. Digital transformation plays a crucial role in overcoming the crisis and restoring business processes. Digital transformation enables small and medium-sized enterprises to carry out their activities in a new way. In addition, it contributes to the sustainable competitive advantage and economic growth of businesses. In this context, the purpose of the report is to analyze the process of digital transformation in small and medium-sized enterprises in Bulgaria in the conditions of crisis; it aims to highlight the major problems businesses face with the implementation of digital technology as well as make recommendations as to how they can overcome them. Statistical methods were used to analyze the state of digitalisation of small and medium-sized businesses and to give an evaluation of the results obtained in the study. The analysis of digital transformation in small and medium-sized enterprises is based on statistical data from the statistical data from the National Statistical Institute. Overall, the paper looks at the main theoretical aspects of digital transformation and its impact on businesses in a time of a crisis. Based on the analysis and evaluation given of the results, summarized conclusions are made and recommendations for successful implementation of digital transformation are provided.

**Keywords:** Digital Transformation, SMEs, covid-19 crisis.

# Problems of Unemployment in the Conditions of Crisis

Yocheva Gergana and Kyurova Vyara

South-West University "Neofit Rilski", Faculty of Economics, 66, Ivan Mihailov Str., 2700 Blagoevgrad,

Bulgaria

[geryiocheva@abv.bg](mailto:geryiocheva@abv.bg), [verivasileva@abv.bg](mailto:verivasileva@abv.bg)

**Abstract.** The global crises of different natures that have occurred have a significant impact on the growing unemployment in all economic sectors in Bulgaria. The labor market heavily affected by emerging crises and forced to adapt enterprises to the situations that have arisen or to close their doors permanently or indefinitely. In this regard, the present scientific report aims to clarify some key issues and risk factors of unemployment in the current recessions. The lack of adequate policies to deal with the main problems related to unemployment pose enormous barriers and obstacles to enterprises in all economic sectors to search for ways to reduce and deal with job losses. Concomitant difficulties are associated with serious and severe problems, reflecting a significant extent the income, the standard of living, and the normal existence of the human factor. Based on the methods of comparative analysis and analysis of statistical data, the main problems identified and made recommendations to limit and overcome the increase in unemployment in the country.

**Keywords:** Unemployment, Crises, Problems

# Problems of Strategic Marketing Management of Entrepreneurial Business in the Conditions of Crisis

Vyara Kyurova 1 and Dilyana Yaneva 2

1 South-West University “Neofit Rilski”, Blagoevgrad, Bulgaria

2 South-West University “Neofit Rilski”, Blagoevgrad, Bulgaria

[vyara.kyurova@gmail.com](mailto:vyara.kyurova@gmail.com)

[d\\_janeva@swu.bg](mailto:d_janeva@swu.bg)

**Abstract.** In times of pandemic and global financial instability, strategic marketing management is not only an opportunity for business survival but also an important prerequisite for company sustainability, growth, and competitiveness. It is a key factor in finding reliable solutions to overcome company problems not simply by adapting to the conditions of the environment, but also to find a dynamic equilibrium with it. It helps to outline the main strategic priorities of the entrepreneurial business by changing the traditional way of thinking. In this context, the purpose of the scientific report is to analyze the process of strategic marketing management and to bring out its problems. The assessment is based on the results of a survey of 68 representatives of the entrepreneurial business in Bulgaria. It has a representative character and has used primary data. The direct survey in which respondents themselves fill in the questionnaire was used as a data collection method. The survey was conducted in the period May-July 2022.

**Keywords:** strategic marketing management, entrepreneurial business, crisis.



# The Future of Selling Products and Services through Personalized Marketing

Hamëz Rama 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

hamez.rama@ubt-uni.net

**Abstract** Marketing is considered one of the promoters and the main catalysts for the development of the enterprise, system and the state in general in the economic context, while the third millennium is presented with globalization unseen of world economies with particular emphasis on world markets and extreme competitiveness. Marketing is a very broad concept and as such it focuses on identifying the specific concept or policy and activities that are relevant to the sale of products and services. The competitiveness and uncompromising fight for the markets respectively for each consumer has become even tougher by not selecting the place, time, forms, policies, tools and people to achieve their objectives, to position themselves in the target markets, and to add their income. Personalized marketing is one of the most specific concepts which is presented as hope for a better future for the sale of products and services. The purpose of this paper is to present the trend of the application of personalized marketing by national companies, highlighting the specifics of the application of personalized marketing as a concept of the future for the sale of products and services. Personalized marketing or one-to-one marketing, it is relationship marketing between the business and the consumer that promises add value to the customer base, thus creating relationships and communication for all needs, demands and wishes so that the business can customize the product or service to meet those needs, demands and wishes. Therefore, each business company to implement personalized marketing must identify client and consumers for their contacts, their attributes, for their habits, traditions, cultures and preferences for products and services.

**Keywords:** marketing, sales, product, personalized, one to one, customer

# **Analysis of the transformation of electrical energy from thermal energy to alternative energy as an economic and ecological need in Kosovo**

Vehbi Ramaj 1 and Mustafë Kadriaj 2

1 University "Haxhi Zeka", Peje, Republic of Kosovo

2 Business College, Pristina, Republic of Kosovo

**Abstract.** Former United Nations Secretary-General Ban Ki-Moon said at the Rio Earth Summit in 2012: "The road ahead is long and difficult" Sustainable development represents social development, which meets current needs, without harming the needs of future generations. In this respect, energy and the environment are essential factors of social development. Most problems of a physical environment can be solved, at least to a degree, when we have enough energy and when the same energy is not expensive and can be used without creating major environmental problems. Coal in Kosovo is the primary resource, respectively the primary producer of mechanical and electrical energy, at the same time today it is the most encouraging source for sustainable energy production in the conditions of the Republic of Kosovo. The search for finding, developing, and using energy from other renewable sources is constantly encouraged. Using various wastes and discharges of an organic nature serves to balance the need for thermal energy (heat) and electricity in the energy sector. It is worth mentioning the fact that it is fully possible to use such wastes as agricultural waste, food waste, and anything that can be discharged organically to produce Bio-energy. Through this paper, we will analyze in scientific terms by shedding a little light at the same time recommending how Kosovo should approach the provision of electricity using coal or to focus on alternative energy with the sole purpose that businesses and citizens are sufficiently supplied with electricity while preserving the environment.

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

# How to Influence Market, Competition and Consumers

Besnik Skenderi 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[besnik.skenderi@ubt-uni.net](mailto:besnik.skenderi@ubt-uni.net)

**Abstract.** This paper is discussing three international companies that are also well known brand names and those companies could be considered as companies that are influencing market, competition and consumers. This paper discusses Coca Cola, Microsoft and Wikipedia. Coca Cola is oldest company and it is specialized on producing and distributing carbonated soft drinks, while Microsoft is leading company for developing closed source code operating systems and application software's. In addition, this paper is discussing also Wikipedia that is free online encyclopedia and it is based on open source code and it is non profitable organization.

**Keywords:** Coca Cola, Microsoft, Wikipedia, Strategy, Market, Innovation

# **Public-Private partnership and its role in the quality of public service: Case Study Prishtina International Airport “Adem Jashari” and the cleaning company “Unity” in Mitrovica**

Bashkim Nurboja 1 and Vjollca Dobreva

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[bashkim.nurboja@ubt-uni.net](mailto:bashkim.nurboja@ubt-uni.net)

**Abstract.** In today’s challenging global economy, a country’s ability to provide the necessary infrastructure and public services has become increasingly critical to its economic growth and position in the investment community. Where there are insufficient resources and investments to meet basic infrastructure needs, this “infrastructure gap” could pose a serious challenge to the country prospects for economic growth, human capital development and social cohesion. Public-Private Partnership (PPP) is quite widespread and has proven to be one of the most beneficial instruments in both developed and developing countries, given the contribution they make to economic development. PPPs gained popularity in the early 1980s when inefficiencies encountered by public institutions led to the creation of the so-called New Public Management (MRP) in the United Kingdom (in Margaret Thatcher’s time) and other Anglo-Saxon countries. This meant reducing the size of the Government and increasing the role of the private sector in providing public services. The growth of PPPs over the last few decades and especially in the last ten years, has been motivated by two key drivers - the need to increase the quality of service and the limited opportunities of public funds to meet the needs and expectations for public services Kosovo’s experience with PPPs is still modest with a limited number of transactions being concluded and some others being planned. Kosovo has had a clear PPP policy directive since 2008. The legal and institutional environment governing the PPP system in Kosovo is modern and in line with EU directives, including the PPP Committee (PPPC) and the Central Department for PPPs (DPPPP). Public authorities are increasingly being run by PPPs to provide public infrastructure and services efficiently and cost-effectively.

**Keywords:** Partnership, public-private, its role, quality, Kosovo.

# Microfinance Influence on Employment and Education in Kosovo

Shpresim Vranovci 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[shpresim.vranovci@ubt-uni.net](mailto:shpresim.vranovci@ubt-uni.net)

**Abstract.** Support for microfinance continues to be on top of the agenda of policymakers in many European countries. The issuance of microloans by microfinance institutions is regarded as an appropriate tool for addressing financial exclusion by commercial banks and creating employment opportunities in the country. One of the critical objectives of microfinance institutions is to influence poverty reduction by providing credit for income-generating purposes. Yet, the suggestion of its actual effect on poverty reduction is still widely discussed. Poverty and unemployment have always been linked, with employment often seen as the response to poverty reduction. Education in the country is vital to its economic development. Lower education achievement rates reduce workers negotiating power in the labor market and consequently increase unemployment in the country. In theory, access to finance increases the beneficiary's chances for employment due to the possibility of investing in education or entrepreneurial initiatives. This paper examines the relationship between microloans and the education achievement of the loan recipient in Kosovo and their impact on employment. Limited literature outlines a connection between receiving loans and microloan recipients educational attainment. With the youth unemployment problem in Kosovo and the growth of microfinance institutions combined with this, it is essential to understand the implications of the activity of this institution on people's decision to follow education.

# The Impact of Micro-Financial Institutions on Employment in Kosovo

Shpresim Zefi 1 and Shpresim Vranovci 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[sz55794@ubt-uni.net](mailto:sz55794@ubt-uni.net) , [shpresim.vranovci@ubt-uni.net](mailto:shpresim.vranovci@ubt-uni.net)

**Abstract.** In general, microfinance institutions are organizations that provide small loans to low-income individuals or family businesses. Microfinance institutions, or MFIs, come in all shapes and sizes. They may differ in scale, experience, legal status, strategies, and budget. These organizations provide financial services to individuals and businesses with financial difficulties. Microfinance institutions aim to stimulate economic activity among those people with low incomes, for whom access to formal banking services is impossible. With the lending activity of these institutions, local businesses began to become more active in the markets, consequently impacting Kosovo's employment rate. This study examined the effect of microfinance institutions on employment levels in Kosovo. The study employed secondary data from the Association of Microfinance Institutions of Kosovo and the Central Bank of Kosovo. The study adopted Pearson correlation and multivariate regression techniques for data analyses. The results showed that microfinance institutions and employment were positively and significantly related.

# Business Communication and Technology Trends

Gonxhe Beqiri 1 and Korab Gashi 2

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[gonxhe.beqiri@ubt-uni.net](mailto:gonxhe.beqiri@ubt-uni.net) , [korab.gashi@ubt-uni.net](mailto:korab.gashi@ubt-uni.net)

**Abstract.** With the development of technology, business communication has evolved significantly. The nowadays technology trends have been considered as a facilitating way in which many industries have increased the flexibility of communication. Therefore, the aim of this study is to emphasize the most recent technology trends that have an impact on how businesses apply their communication strategy. The methodology used for this paper is mainly based on secondary data analyses, from different verified resources related to the link between technology trends and business communications. This analyses approach aims to create a conceptual framework for future research and development of primary data analyses specifically in Kosovo and the region. The results indicate that especially with the impact of pandemic in the year 2020 businesses worldwide became more aware about the importance of technology effect on communication strategy. Hence, it is important to invest in ongoing trend development of technology that improve communication in the company and community. The results show that the communications styles are altering since of the remote work. Moreover, the devices used to communicate in different companies have changed, before the communication process was mainly based on one hardware device, usually PC and nowadays the communication process in based at least in minimum two to three devices.

**Keywords:** Business, communication, technology, trends, strategy.

# Management of International Contracts and their implementation in the international market

Mentor Shaqiri<sup>1</sup> and Agnesa Sinani<sup>2</sup>

<sup>1</sup> UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

mentor.shaqiri@ubt-uni.net agnesa.sinaani@gmail.com

**Abstract.** The field of research chosen to conduct this study is related to the management of international contracts and their implementation in the international market, namely how international contracts are implemented with a focus on business dynamics in the era of digital technology implementation. The main objective of this study is to identify and discuss changes in the implementation of international contracts and their impact on businesses that aim to operate in the international market. The current state of the law governing international trade contracts is hardly satisfactory. Despite the unprecedented increase in the volume of trade and the development of increasingly integrated markets if not globally, then at least at the regional level they increase cross-border business transactions in order to continue to a large extent, all these transactions subject to national laws. This situation can be considered at the same time as the opportunities and challenges for innovative approaches to the implementation of international contracts and new work environments. The results of this paper highlight some key aspects for the management of international contracts and their implementation, economic development, employment, communication, innovation and business productivity. This study answered a key question which is supposed to provide supportive solutions to the research opportunity and problem. The question is whether international contracts affect the regulation and development of doing international business. Including previous findings and findings from quantitative survey research within Kosovo businesses, the research further answers questions about international contracts and their implementation in the international market and in Kosovo.

**Keywords:** International Contract, Management, International Trade, Effectiveness, Efficiency and Productivity.



# Critical Success Factors for the implementation of Total Quality Management in Small and Medium Enterprises: Literature Review

Engelbert Zefaj 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[Engelbert.Zefaj@ubt-uni.net](mailto:Engelbert.Zefaj@ubt-uni.net)

**Abstract.** This research aims to identify and validate the Critical Success Factors (CSF) that make possible the implementation of Total Quality Management (TQM) in Small and Medium Enterprises (SME). To carry out the literature research, the research objectives were taken into consideration, relevant scientific articles were selected and their content was analyzed. To find relevant scientific articles, the Google Scholar database was used, it allows the author to search for all forms of scholarly literature. The research is based on the criteria: relevant key words, time period 2015 onwards and only journals that apply the peer-review method. After conducting the literature research, 11 relevant articles were identified, with 25 authors from 11 different countries on four continents. After reviewing the content of the papers, 21 CSFs were identified and 12 out of 21 were validated. The validation was carried out with the engagement of quality management experts and the Cronbach's Alpha method was used to measure the degree of compatibility. The identified CSFs originate from the literature that deals only with small and medium-sized enterprises, excluding micro-enterprises and individual businesses as well as large enterprises and corporations. Also, the time period of the publications is only 7 years. This can be considered a limitation in terms of research. These identified and validated CSFs can serve in the future for wider field research to understand the level of managerial quality in SMEs.

**Keywords:** Total Quality Management, CSF for TQM, SMEs,

# Identification of the main challenges and opportunities for entrepreneurs during the pandemic

Flutura Baraliu 1 and Nora Sadiku-Dushi 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

fb10116@ubt-uni.net, nora.sadiku@ubt-uni.net

**Abstract.** The period of the global pandemic crisis has undoubtedly caused many problems for small and medium enterprises. Like everywhere else also in Kosovo, the two-year pandemic period has greatly changed the development of many business activities. Both the public and the private sectors faced many unknowns during this period. Fortunately, access to the internet enabled a lot of businesses to quickly become digital and to develop their activities in a new reality unknown to them. The main goal of this research was to understand how the crisis has affected the enterprises in the region of Ferizaj, more specifically, to define the challenges and opportunities of small and medium enterprises in times of the COVID-19 crisis. This research is of an empirical nature and is carried out by collecting primary data via a self-administered questionnaires distributed physically to 74 businesses of different activities operating in the region of Ferizaj. The result showed that the main challenges during the pandemic were the lack of customers, increased costs and inability to pay obligations, while it was stated that despite the fact that digitalization has been applied in times of crisis a large part of the respondents stated that it has not created any opportunities for their business.

**Keywords:** Challenges, Opportunities, Enterprises, COVID-19, Digitalization

# Impact of marketing expenditure on profitability

## Case study “Facebook Company”

Mirjeta Domniku 1 and Flaka Camaj 2

1,2 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

{mirjeta.domniku 1 , fc37710 2 , }@ubt-uni.net

**Abstract.** The development of globalization and technological progress nowadays has made it necessary for all companies everywhere in the world to follow a certain marketing strategy. Moreover, the environment in which businesses operate is constantly changing and increased competition has made marketing one of the means of differentiating companies from one another. Therefore, this paper is based on the impact of marketing expenses on profitability - Case study Facebook Company from 2000 to 2020. The results show that there is a significant positive correlation between marketing expenses and net profit. The regression analysis shows that the relationship of the variables is important, while the coefficient of determination reinforces the result of the analysis even more. Taking into consideration the negative impact that Facebook has had and policies for breaking privacy or low taxes, we advocate for marketing strategies focused on increasing the reputation and at the same time the net profit of the firm.

**Keywords:** facebook, marketing strategy, net profit.

# Statistical modeling to predict the possibility of failure of a certain system, process or product

Elmira Kushta<sup>1</sup>, Miftar Ramosacaj<sup>2</sup> and Zamira Sinaj<sup>3</sup>

<sup>1</sup>Department of Mathematics, Faculty of Technical Sciences, University "Ismael Qemali", Vlore  
[kushtamira@gmail.com](mailto:kushtamira@gmail.com)

<sup>2</sup>Department of Mathematics, Faculty of Technical Sciences, University "Ismael Qemali", Vlore  
[miftar.amosaco@gmail.com](mailto:miftar.amosaco@gmail.com)

<sup>3</sup>Department of , Business and Management, Faculty of Economy, University of Vlora.  
[sinaj.zamira@yahoo.it](mailto:sinaj.zamira@yahoo.it)

**Abstract.** This study has the main objective to understand the factors that influence the behavior of a consumer system. In recent years, tourism has received a significant development, directly affecting economic growth, through the collection of foreign currency and the creation of new jobs, for this reason it was considered reasonable to address it in this paper. Our aim is to highlight the determinants of tourism development, policies and strategies, macroeconomic effects, not leaving aside social effects and tourism marketing as a key point of tourism development. The data were processed in SPSS, by means of EFA, highlighting those factors that act as incentives and others as limitations. From the review of the literature, it was seen that this impact could be measured with different econometric methods. In the case of our country, we will use the VAR (Vector Auto Regressive) method.

**Keywords:** Logistic regression, EFA, consumer behavior, VAR model, Granger test.

# Securitization, Benefits and Abuses

Vesna Paunkovska Dodevska 1 and Bashkim Nuredini 2

1 Triglav Insurance JSC, Skopje, Republic of North Macedonia

2 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

1 vesna.paunkoska@triglav.mk, 2 bashkim.nuredini@ubt-uni.net

**Abstract.** Deregulation enabled the development of a strong competition between banking and other financial institutions. In finding new sources of funds to finance activities, banks also use the instrument of securitization. Securitization is the process of converting part of the assets of the banks (mostly with a reduced value) into separate forms (securities) that are acceptable (upmarket securities) for investors on the secondary market. Securitization as a modality refers to the process by which loans are converted into liquid assets by issuing securities based on previously approved loans. Some authors, who strive to determine the content of the term in the broadest sense, define securitization as a process that turns financial relations into a business transaction. With securitization, non-liquid financial instruments (credits, loans, liabilities) are converted into liquid, easy-to-trade securities. Most often they are called collateralized securities because they are defined in the assets along with the pledge.

**Keywords:** Securitization, stocks, banks, benefits, abuses

# The Factors That Influence the Implementation of Audit Recommendation

Fidane Spahija Gjikolli 1 , Mirjeta Domniku 1 and Labeat Mustafa 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[fidane.spahija@ubt-uni.net](mailto:fidane.spahija@ubt-uni.net) , [mirjeta.domniku@ubt-uni.net](mailto:mirjeta.domniku@ubt-uni.net) , [labeat.mustafa@ubt-uni.net](mailto:labeat.mustafa@ubt-uni.net)

**Abstract.** Through various audits, the National Audit Offices help the public institutions of the country where they operate to improve governance and increase responsibility, transparency, and accountability in spending public money in the interest of the country's taxpayers. The level of implementation of recommendations is the best indicator to understand whether the management of public institutions is improving existing processes and controls in the areas where errors and irregularities have been identified. Comparing the different countries, the level of implementation of the recommendations of public institutions after the audit in some countries still remains at an unsatisfactory level. Increasing the implementation of recommendations should remain one of the main goals of the National Audit Offices. Some of the factors that influence the increase in the level of implementation of recommendations are the Constructive relationship between auditor and auditee, Audit report quality. Existence of a follow-up system, Parliamentary involvement, and Dissemination of the follow-up report. For some countries, these factors may be inapplicable due to not being included in the national legislation. Therefore, each state must see what are the best practices among the states in order to offer the possibility of increasing the impact of these implementations.

**Keywords:** Implementation of audit recommendations, Influence factors, Eu countries.

# Challenges in managing innovation-marketing projects in retail industries

Ermira Shehu 1 and Osman Sejfiqaj 2

1 University for Business and Technology, Lagja Kalabria 10000. Pristina,  
Republic of Kosovo,

2 University Haxhi Zeka, UÇK Street, 30000. Peja, Republic of Kosovo,

[osman.sejfiqaj@unhz.eu](mailto:osman.sejfiqaj@unhz.eu) , [ermira.shehu@ubt-uni.net](mailto:ermira.shehu@ubt-uni.net)

**Abstract.** Every industry have their own challenges that need to face when planning to bring innovation. In every situation, the leading company have the responsibility to bring new era of innovation, especially in marketing campaign. The planning process, for these projects is more complicated and need special focus and commitment from core team. With this paper, we will investigate and present the results from our research in 3 main retail companies in Republic of Kosovo. The aim of the paper is to present the main challenges, categorized, that all marketing team need to consider before planning marketing campaigns and innovation. Based on the results, marketing planning is very dynamic in retail industry, because the competition is very strong, and consumer's behavior is changing rapidly, especially after Covid 19 period. The survey results shows that the main focus of the marketing team is to create a good goods offer for the consumer's and making creative offer announcements. The other planning campaigns are linked with the sales and brand awareness.

**Keywords:** project management, marketing, retail.

# Government Expenditures and Economic Growth: Empirical Evidence for Western Balkan Countries

Kestrim Avdimetaj 1 and Muhamet Gërvalla 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

kestrim.avdimetaj@ubt-uni.net,

muhamet.gervalla@ubt-uni.net

**Abstract.** The main aim of this scientific study is to present the relationship between government expenditures and economic growth. More specifically, this paper will analyze the impact of government expenditures on economic growth in Western Balkans countries. The study will analyze in a long-term period the effect of government expenditures on economic growth from 1995 to 2021. To test the relationship between government expenditures and economic growth, we will use econometric models such as OLS, Fixed Effects, Random Effects, as well as Dynamic Panel Data through the Arellano- Bond and Arellano-Bover tests. The results show that there is a negative relationship between government expenditures and economic growth. An increase of government expenditures by 1% its effect will be negative by -0.39% on economic growth in the Western Balkans countries, the exceptions are private consumption expenditures and government expenditures for education, which have shown a positive relationship with economic growth. These results are very significant for Western Balkans countries



# The change of Share Prices of Companies from Different Sectors in the Period of the COVID-19 Pandemic

Bukurie Imeri-Jusufi 1 and Blerta Kondri 2

1,2 Univeristy „Mother Teresa“-Skopje Faculty of technical sciences, Republic of North Macedonia

[bukurie.imeri@unt.edu.mk](mailto:bukurie.imeri@unt.edu.mk) , [blerta.kondri@unt.edu.mk](mailto:blerta.kondri@unt.edu.mk)

**Abstract.** The Macedonian stock market was not unaffected by the global level crisis that was present as a result of the COVID-19 pandemic. The share prices of the companies that are listed on the stock exchange started to change the value but not in the same direction, because all companies from different sectors were not affected in the same way by the COVID 19 pandemic. The institutional capital market index MBI-10 in 2020 as a result of the COVID 19 pandemic had a decrease of 22.43% in March of 2020 and this decrease continued until the beginning of 2021 when the increase trend began and at the annual level increased to 30.8%. If we analyze it on the basis of the component structure, the prices of all shares that are components of the stock market index have increased annually. From a structural point of view, five of the ten companies that are the elements of MBI-10 are commercial banks, while the other five are from other sectors, which shows that we have a high level of sectoral concentration. In the Macedonian Stock Exchange, 94 companies are listed, the paper will analyze the impact of the COVID-19 pandemic on the changes in the prices of their shares in the period of the pandemic and post-pandemic, as well as whether all sectors were affected in the same way. Based on the analysis of the financial statements of companies listed on the Stock Exchange, even though there have been difficult years, some companies have managed to achieve high profits in 2020 and 2021.

**Keywords:** share, stock market, COVID 19, MBI 10, capital market.

# Financial inclusion determinants in South-Eastern European Countries

Albulena Jahja<sup>1</sup>

<sup>1</sup> UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo albulena.jahja@ubt-uni.net

**Abstract:** New financial technologies (FinTech) are viewed as important enablers of financial inclusion (defined as the use of formal bank accounts), despite theory suggesting that market imperfections, primarily information asymmetries, transaction costs and market segmentation, prevent people from escaping poverty considering the constraints of access to formal financial services. This analysis examines the individual and country level determinants of the financial inclusion while evaluating the policies that are associated with the financial inclusion of women, poor, rural, and young people in South-Eastern European Countries. To understand the determinants of financial inclusion at the country level, the study employs a two stage Heckman Selection while controlling for GDP per capita, variables measuring costs of banking, variables measuring know your customer requirements, variables measuring bank ownership etc. Additionally, the analysis uses a probit model to assess the individual characteristics that determine the financial inclusion. The preliminary findings suggest that lower financial inclusion is more prevalent among women and people residing in rural areas.

**Keywords:** financial inclusion, financial institution

# Tourism Management in Places with Natural and Cultural Importance

Sali Krasniqi 1 ,Fatmire Shala Dreshaj 2 and Kushtrim Dreshaj 3

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[Sali.krasniqi@ubt-uni.net](mailto:Sali.krasniqi@ubt-uni.net) , [fatmire17@hotmail.com](mailto:fatmire17@hotmail.com) ,  
[kushtrimdreshaj85@gmail.com](mailto:kushtrimdreshaj85@gmail.com)

**Abstract.** In this paper the main aspects of cultural and natural heritage, adding a special emphasis to its management. The management of cultural heritage is a challenge to all countries, same as to the most developed and to those in development, to promote the values and special specifics in the international arena, also to help in the country's economic development. Management phases, that are included in all social life fields, can be applied in tourism too, proving management's universality. Maintenance of cultural and natural objects is based on international charters and conventions, in national legislations, and in customs of different countries.

**Keywords:** Tourism management, culture, heritage, country, public politics

# The importance of contract management for successful business in Kosovo Telecom

Mentor Shaqiri and Milaim Sylejmani<sup>2</sup>

<sup>1</sup> UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë, Kosovo

<sup>2</sup> Kosovo Telecom, milaimsylejmani68@gmail.com

**Abstract.** The contract is an important source of obligations under the law of obligations and represents communication between the contracting parties where each of them responds to its share. The benefits of contracts are seen not only for the individual but also for the groups or entities as a whole. In this context, various studies have been done on the impact of contracts on successful business. Despite the fact that contracts are legal agreements entered in writing, between one or more operators whose object is the supply of goods, performance of works or services, in accordance with applicable laws, everyone who is involved in the process of contract management, is a creator of good work practice, especially because there are no similar situations, because not everything can be ideally regulated in positive legal provisions, correct principles must be applied in order for both parties in the procedure, but also the general public, to have a positive outlook, and strong belief in the process. This paper will present a real analysis of the importance of contract management for successful business, so through this paper we will analyze the relationship between contract management and their impact on successful business. The purpose of this topic is to evaluate the role and importance of factors that affect the management of contracts. To give another dimension to the paper, the questionnaire will be reviewed with some of the employees at Telecom of Kosovo. The level of data used in the models reviewed here may attract the attention of many researchers to make comments seeking a higher level of data. Finally, we will present the conclusions and recommendations of the paper.

**Keywords:** Contract, procurement, procedures, warehouse, business.

# Diversification of Access to Finance Mechanisms as a Tool to Empower Innovation and Entrepreneurship

Ermal Lubishtani<sup>1</sup>

1UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

elubishtani@ubt-uni.net

**Abstract:** There is evidence that innovative and entrepreneurial start-ups play a critical role and are a strong economic and social development factor towards a knowledge-based society. Start-ups help societies to commercialise existing research output with the aim of introducing creative solutions in addressing different needs and societal problems. To this day, the Kosovo start-up ecosystem is still underdeveloped, offers limited access to finance, weak market-access links, in-existent venture-capital funding, and limited angel investment opportunities. Thus, supporting start-ups by diversifying access to finance mechanisms and instruments is essential to enable the success of such ventures with the potential of significant contribution to the long-term economic progress. Therefore, empowering existing structures or instituting new mechanisms contributing to the stability, facilitation of successful start-up ecosystem and growth of start-ups does undoubtedly contribute to the favourability of innovation, new business formation, and entrepreneurship driven by a higher survival rate and business growth (scale-up). Such a setting is also differently also known as a “start-up ecosystem”, wherefrom entrepreneurs’ and start-ups’ growth potentials are positively affected.

**Keywords:** innovation; entrepreneurship, start-up ecosystem, economic progress, knowledge-based society

# Digitalization and improvement of services for citizens by the Kosovo Police

Usiana Konjuhi 1 and Gonxhe Beqiri 2

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

uk42810@ubt-uni.net, [gonxhe.beqiri@ubt-uni.net](mailto:gonxhe.beqiri@ubt-uni.net)

**Abstract.** Nowadays, when the development of technology has increased the use of digitalization in variety of products and services that an institution can offer, influences the way how they provide information. Therefore, the purpose of this research is to emphasize the role of digitalization in service activities in Kosovo Police, with a special focus on the application “Report to the Police”. The methodology of the paper includes the secondary data analysis from reports of Kosovo Police, the general history of the main activities that the institution provides for its citizens and the establishment of digital platforms regarding activities carried out by the responsible persons of each department, including in all regions of Kosovo. Whereas the primary data analyses presented the data collected from the survey conducted with the citizens of the Republic of Kosovo through a questionnaire. Citizens over the age of 18 have given answers regarding the importance of digital activities nowadays, how much they use social networks to get informed about the activities carried out by institutions in Kosovo. Specifically, the main questions are focused about the Kosovo Police Institution and how they use the “Report the Police” Application. The sample was limited since the application “;Report to the Police”; is launched only for Android users. Therefore, this research recommends that the application should be available for all smart phone users, moreover since the application is quite practical and effective, it should be promoted more actively to the citizens, through variety of digital marketing activities.

**Keywords:** Digitalization, public institutions, citizen, information services, application

# Tax system in Kosovo and comparison with Albania

Artan Haziri 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

**Abstract.** A tax system represents the totality of taxes applied in a country, the income from which it is used to finance various functions of the state. Tax systems differ from country to country and depend on factors such as the state of the economy, its structure, population size and structure, and so on. These factors and others should be taken into account when designing fiscal policies that shape the system tax, so the tax system in Kosovo compared to other systems in the region and the world should be different. In addition to differences there are similarities between tax systems. In this paper a comparison of the elements of the systems of the two neighbouring countries, Kosovo and Albania, has been made. Although the goal of both is integration into the European Union, where differences are minimal between member states, both have different fiscal policies and systems, the elements of which have differences and similarities. In this paper are addressed the points in which systems converge and those that have divergence among themselves. The main hypothesis of this paper is that the tax system in Kosovo has room for improvement and needs to be adapted based on social, economic and political factors

**Keywords:** tax system, fiscal policies

# An analytical setting-based approach to business continuity strategy in uncertain times

Ylber Limani<sup>1</sup> and Biona Selimi<sup>1</sup>

<sup>1</sup> UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[ylber.limani@ubt-uni.net](mailto:ylber.limani@ubt-uni.net)

, [bs37686@ubt-uni.net](mailto:bs37686@ubt-uni.net)

**Abstract.** Uncertain times have historically caused distress for businesses in many aspects. Some of the phenomena that caused ambiguity in business had regional effects, and some others had global effects. COVID-19 is an example of a phenomenon that caused a high degree of business activity disruption around the world to have a big impact on enterprise operations, society and the economy in general. Nonetheless, this pandemic made leaders and managers act quickly and increase the degree of flexibility, developing a new narrative for the way of doing business. Consequently, we considered it important to discuss ways for companies to orient themselves towards mitigating the financial consequences of the pandemic and adapt accordingly to withstand it. In this regard, it is assumed that businesses face various and serious problems in planning and implementing recovery strategies. This paper assumed that an extrapolative setting-based approach will help businesses in planning and implementing successful recovery strategy.

**Keywords:** Uncertain times, strategy, recovery, pandemics, scenario, forecasting



# The Impact of Job Satisfaction on Employee Performance

Fisnik Bytyqi 1 and Nazmi Zeqiri 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

[fbytyqi@live.com](mailto:fbytyqi@live.com) , [nazmi.zeqiri@ubt-uni.net](mailto:nazmi.zeqiri@ubt-uni.net)

**Abstract.** This study examined employees' level of job satisfaction and the impact it has on employee performance. The study was distributed to 72 employees based on a simple random sampling technique. The quantitative research findings revealed that when employees are satisfied with their jobs they will be more committed to their employer and will be more productive considering their satisfaction with their job. However, the findings indicate that satisfied workforce is not the sole indicator or a guarantee to have a high level of work performance. There are other factors like organizational values, work schedule, pay & benefits, company stability credibility that should be present in order to achieve a high level of work performance.

**Keywords:** Job Satisfaction, Employee Performance, Organizational, Performance, Organizational Commitment, Public Sector.

# Statistical Management in Connection With the Capitalization and Update of Assets

Shaqir Elezaj 1 and Ramë Elezaj

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

shaqir.elezaj@ubt-uni.net, rame.elezaj@cta-ks.com

**Abstract.** When it comes to the definition of optimization models for capitalization and actualization of assets, then an all-around professional and scientific analysis is needed in relation to the problem in question. The models in question are closely related to terms such as interest, time, and financial operation. Interest, which is usually characterized as the interest rate, is the most used variable or indicator in financial operations. Here are related problems for the case when the loan is taken for a certain period of time, then the problem of depositing funds in banking institutions. In all such cases, we have the optimal policy of capitalization and actualization of funds, not only in the quantitative aspect but also in determining the optimal time period for such modeling.

**Keywords:** financial operations, financial model, actualization, reactualization, interest rate, time of financial action

# Accountability Responsibility as an Instrument for Performance Measurement and Profit Increase, Case Study Profix Manufacturing Enterprise – Gjilan

Burhan Rexhepi 1 and Burim Berisha 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

burhan.rexhepi@ubt-uni.net, [burim.berisha@ubt-uni.net](mailto:burim.berisha@ubt-uni.net)

**Abstract.** This paper addresses the role and importance of accounting information, in particular liability accounting and the impact of liability centers on the success of the enterprise. The success of business decision making is closely linked to the quality and accuracy of accounting information. Every entity, regardless of ownership, size and form of legal organization, the capital structure exists and functions to achieve its objectives. We live in a time of great changes in external environmental factors, which impose the need to know modern methods and models for running a business. However, the main basis of business success depends on the quality of decision making. The main basis for quality decisions is accounting information. Information is needed in every management process, from planning, organization to the final stage, the control system. This, information is defined as data processed in comprehensible or relevant forms, which serve different users for certain purposes. This means that accounting information is data processed in order to be usable for planning, controlling and making managerial decisions. Normally, managers can not personally undertake direct observations, over all the activity for which they are responsible. Executives receive information from their associates, or through the content of official reports, some of which are prepared by the accounting sector. In organizations that have centralized decision-making systems, it takes a long time for local information to pass to headquarters, and conversely, decision-making from headquarters to local units takes a long time. In the conditions of an economy with a very strong dynamics, delays in information make communication difficult, reducing the effectiveness of the decision. Therefore, in a decentralized enterprise, when the local manager has authority and responsibility in making and implementing decisions, such problems do not arise. Local managers are able to respond to customer requests for price reductions, as well as requests from local governments. The different languages used by managers of different divisions affect communication problems. For this reason, the decentralized structure pushes decision-making down to the local manager level, thus eliminating the need for centralized instructions. Central management by decentralizing operational decisions, is free to focus on strategic planning that is characterized by long-term decision making. The long-term survival of the company is a priority of central management, rather than operational actions. Top managers have more time to deal with the most important development issues of the company. With decentralization, low-level managers are given the opportunity to make decisions and implement them. Senior managers control and evaluate the decisions of lower level managers. In the paper, special importance is given to liability accounting, which deals with the identification and tracking of costs and revenues in different departments and departments, divided into areas of responsibility. Every manager has rights and responsibilities in achieving the objectives of the department he leads. All costs incurred, income, loss, profit and investment are subject to the responsibility of someone in the management structure of the enterprise.

# **The impact of the business environment barriers on SMEs growth: the context of Kosovo**

Kujtim Zylfijaj 1

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

**Abstract.** This research empirically investigates the impact of the business environment on SMEs' employment growth. The SMEs in Kosovo struggle with many barriers either to survive or achieve growth objectives; this includes internal and external barriers for doing business. In this context, we use the survey sample of the Riinvest Institute, which consists of SMEs in Kosovo. The multiple linear regression models in statistical software SPSS were employed to check the statistical significance of the business environment barriers to SMEs employment. In line with the literature review, the study finds that the business environment has significant effects on SMEs' employment growth. This, according to analysis, some institutional obstacles such as limited access to finance and corruption have significant impact on SMEs' employment growth. Whereas, as regard to firm characteristics; the number of employees and firms' amount of sales have shown to be statistically significant to the firms' employment growth. The research findings are relevant for firms' managers and policymakers since they capture the effects of the business environment on SMEs' employment growth.

**Keywords:** SMEs; business environment; employment; growth

# Talent management – a strategy for millennials higher retention

Sidita Dibra<sup>1</sup> and Keisi Thano<sup>2</sup>

<sup>1</sup>University of Tirana

<sup>2</sup>Deloitte Albania & Kosovo

sidadibra@feut.edu.al, keisithano14@gmail.com

**Abstract.** Employee retention is crucial given the high competitiveness in the commodities, services, and labour market. Companies design and implement human resources development programs; empirical research has verified such interventions' positive effects. Talent management is an essential component of these human capital policies. It is becoming crucial in the last years due to the disruptive changes in the world of work caused by COVID-19 pandemic effects, digital and green transition and especially in developing contexts, social disparities, and migration. Millennials' talent management is a compelling research target group due to their attitude toward work and careers. This research aims to unfold the organisational practices of talent management and adaptations due to the new developments and youth perspective. It follows a qualitative approach and is conceptualised as a comparative case study analysis. In-depth semi-structured interviews and document reviews were used to map talent management practices and results of two companies operating respectively in the banking and consultancy sector in Albania. Results show that both organisations acknowledge rapid changes in the world of work, but the adaptations applied are only incremental. Both organisations apply agile working methods and are piloting more rapid development programs covering a wider variety of employees in terms of position and competencies. The findings of this research enrich the literature on talent management practices applied by multinationals in developing contexts and the effect on youth retention and development. From an applied research point of view, this research's findings can serve as an example, especially for mid-size organisations that can be inspired to customise their own strategies in support of human resource development impact in organisation design and implementation.

**Keywords:** talent management; developing countries; multinationals

# The Effect of Stress on Organizational Commitment, Job Performance, and Audit Quality of Auditors in Brunei

Faiiqah Naruddin<sup>1</sup> and Junaid M. Shaikh<sup>1</sup>

UTB School of Business, Universiti Teknologi Brunei, Jalan Tungku Link,  
Gadong, BE1410, Brunei Darussalam

Corresponding author (s): faaiqah.naruddin@gmail.com

junaid9nine@gmail.com

**Abstract.** The fundamental purpose of this paper is to discover how stress influences the organizational commitments, job performance, and audit quality of the auditors. This paper distributed self-administered surveys and further employed univariate and multivariate analysis to examine the feedback. This research referred to stress as time pressure, work overload, role stress, social influence pressure, and work-family conflict. The findings concluded that role stress and social influence pressure significantly and negatively influenced affective commitment, while work-family conflict delivered a substantial direct relationship with affective commitment. Besides, work overload and time pressure have no notable association with affective commitment. All work stress factors have no significant association with continuance and normative commitments. Additionally, only role stress could substantially reduce the job performance of auditors, whereas the other work stress has no significant association with the job performance of auditors. Moreover, only role stress and social influence pressure could substantially diminish the audit quality, and work overload, time pressure, and work-family conflict have no significant relation to audit quality.

**Keywords.** Stress; Organizational Commitments; Job Performance; Audit Quality; SPSS Software

# The PR strategies and tactics used in the new virtual World: Metaverse

Elmedina Qaili

International Balkan University, Skopje, North Macedonia

Makedonsko-Kosovska Brigada bb. 1000, Skopje, North Macedonia

[www.ibu.edu.mk](http://www.ibu.edu.mk)

**Abstract** The Metaverse is one of the most known and used virtual worlds today. Even though the invention of the Metaverse marks the year of 1992, its popularity and use has been prominent when the virtual world became people's everyday use. As fast as the technology evolves, so did and still do evolve its platforms by becoming more sophisticated, modern, trendy and user friendly. With the rise of users, its potential for expansion in other fields, such as PR and Marketing has become a vital part of it. They result as a perfect combination for a successful market and advertisement of different brands, products and services. This paper examines the importance of public relation strategies and how they are implemented in the Metaverse. It does so by first explaining the Metaverse, continuing by explaining the purpose of use of various public relations strategies together with the impact of them on the users and brand owners.

**Key words:** Metaverse, public relations, technology

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# THE SIGNIFICANCE AND EFFECTS OF EXPROPRIATION IN KOSOVO, CASE STUDY STRAŽĚ-IVAJĚ ROAD

Prof. Ass. Dr. Hazer Dana, Donjetë Zogaj Retkoceri, Prof. Ass. Dr. Tomor Çela

University for Business and Technology

Faculty of Information Systems

Prishtine, Kosovo

[hazer.dana@ubt-uni.net](mailto:hazer.dana@ubt-uni.net)

[tomor.qela@ubt-uni.net](mailto:tomor.qela@ubt-uni.net)

**Abstract,** Property represents a legal category that is protected through international conventions, constitutional and legal norms. The right of ownership is defined as a real right, which contains broader administrative authorizations in the case of using and disposing of a thing. All social and economic activities are related to property and its definition. As an administrative unit with public or private ownership, the cadastral plot is of great importance in the evidence of spatial elements (space, ownership, destination and property category) for all current or planned projects, in which certain obligations are imposed. In the case of this work related to the basic element of the property, the general acts of the road infrastructure, the conditions and procedures of the expropriation of the local road within the space of the cadastral areas of the municipality of Kaçanik are presented. The purpose of this paper is to argue the need to follow the administrative procedures of the process of expropriation of cadastral parcels involving all relevant stakeholders in the process in order to prepare the grounds for the construction of road infrastructure in the following cadastral areas: Strazhë, Kotlinë and Ivajë with a length about 5 kilometers. This paper will help the local authorities in the correct implementation of administrative procedures, based on the legislation in force, as well as help in achieving the harmonization of the interests of the stakeholders involved in the process.

**Keywords:** Expropriation, Compensation, Property, Cadastral parcel, Law

# Internal Security threats in Information System - threat protection at all stages of the chain

Amet Shabani\*. Fatos Rushiti\*\*.

University for Business and Technology

Faculty of Information Systems

Prishtine, Kosovo

[amet.shabani@ubt-uni.net](mailto:amet.shabani@ubt-uni.net)

[fatos.rushiti@ubt-uni.net](mailto:fatos.rushiti@ubt-uni.net)

**Abstract:** External threats are threats that come from outside the organization, where they are usually carried out by hackers from other countries, even competition. Common methods include ransomware, phishing attacks and hacking.

Insider threats originate from the organization itself and are usually carried out by a current or former employee, a contractor, a business associate, etc. Insider attacks can be malicious or unintentional. Common types of insider threats include unauthorized data transfer, abuse of employee privileges, and data sharing. Insider threats have been a concern for organizations for a long time, but with digitalization and the growth of the network, they have become even more prevalent. Over the years, some of the largest and most expensive data breaches were caused by insider actors. The Tesla data theft case, which involved large amounts of highly sensitive data being transferred to unknown third parties by a malicious insider, clearly illustrates the danger of insider threats. Similarly, Suntrust Bank suffered a data security breach caused by an employee who stole the records of 1.5 million customers. The goals of this paper are to identify vulnerabilities that consist of vulnerabilities in a system that can be exploited by attackers that can lead to dangerous impact. This paper seeks to provide clarity on the different types of insider threats you should be aware of and the controls and processes that can be used to protect against them.

**Keywords:** Data, Internal Data Security, Internal Threats, Protection from Data Security Threats, etc.

# The impact of social media marketing on SMEs for the development of new websites in Kosovo

Agim Zuzaku

University for Business and Technology,

Pristina, Kosovo

[agim.zuzaku@ubt-uni.net](mailto:agim.zuzaku@ubt-uni.net)

**Abstract.** The forms of marketing that SMEs can do online are wider and more comprehensive. Social networks are the platform that all businesses start their presence on the Internet because this is the most direct and fastest form of business-consumer communication. Therefore this content should be carefully selected and different for different platforms. However, the website is and remains the identity card of an online business. The website is not that frequently updated, but it is the portfolio and history of that business. Therefore, SMEs whose main activity is mainly the sale and purchase of non-daily consumer products have an online presence. It is very important for SMEs to also be verifiable on Google as well as to be found positioned on online maps.

In recent years in Kosovo, we are seeing a decrease in the number of SMEs that are not developing their websites, while new companies are not investing in websites at all, focusing directly on social networks.

Through this research, we have identified the actual situation of SMEs in Kosovo that have websites and that do marketing on social networks, comparing the number of SMEs that do not have a website.

**Keywords:** Social Marketing, SMEs, Websites.

# Analysis of the security issues on 5g network in relation to other networks

Blerton Abazi 1

University for Business and Technology

Faculty of Information Systems

Prishtine, Kosovo

[blerton.abazi@ubt-uni.net](mailto:blerton.abazi@ubt-uni.net)

**Abstract.** Wireless networks have brought innovation in Internet technology, enabling access to all resources within the wireless coverage area. This means that we are no longer connected by wires to computers in the office, school or home. This approach brought relief both in the individual productivity of people and in the business, encouraging that the work is done successfully. Another advantage is the very quick setup without interconnected wires and affordable in terms of cost. Different technologies have been adopted and also developed in terms of wireless communication. In our paper we will elaborate the 5G network as the latest and most advanced mobile system and communication technology that has come into use in recent years. We will compare different network architectures against the developed 5G network architecture as well as the security issues and how different is the security aspects on 5G networks comparing to other networks. We will elaborate how the data is entered into the systems, processed and extracted and measure the level of security. Our paper will be composed from case studies literature review and real examples from the industry.

**Keywords:** 5G, security, networking, internet security, privacy, cyber security

# Digital Transformation: A Review and Synthesis on Key Success Factors

Melinda Pacolli\*

University for Business and Technology

Faculty of Information Systems

Prishtine, Kosovo

[melinda.pacolli@ubt-uni.net](mailto:melinda.pacolli@ubt-uni.net)

**Abstract:** In recent years, there has been a steady increase in scholarly interest, which has resulted in a large rise in the number of articles covering various organizational and technological aspects of the digital transition. By sharing significant macro- and micro-level observations, we map the territory in this work and suggest future study directions for this broad topic. Our findings are primarily drawn from the literature on information systems. The report conducts a systematic analysis of 41 peer-reviewed studies that address various facets of digital transition that were published between 2001 and 2021. We create inductive thematic framework based on our evaluation that identify three major aspects of the digital transformation: organizational, human and technological dimension. We extract additional analytical subunits for each dimension that serve to separate the specifics of digital transformation processes and highlight the most significant and distinctive causes and effects.

**Keywords:** Digital Transformation, Key Success Factors, Information Systems, Technology, Digitalization, Digital innovation, Sustainability, Challenges, Barriers.

# Digitization of banking services and the demographic influences on their use

Fidane Spahija Gjikolli, Albina Uka  
University for Business and Technology  
Faculty of Information Systems  
Prishtine, Kosovo  
[fidane.spahija@ubt-uni.net](mailto:fidane.spahija@ubt-uni.net)  
[au55891@ubt-uni.net](mailto:au55891@ubt-uni.net)

**Abstract.** With the development of technology and competition, even banks have had to adapt and offer digital services. Digitization of banking services is also under development in our country. The provision of digital services by banks in Kosovo has made it easier to access and manage money, without the need to carry cash with us. The purpose of the paper is to show the development of electronic banking services and the demographic influences on their use in Kosovo. In this paper, qualitative and quantitative methods were used, as well as local and international literature related to the treated topic. A total of 250 respondents participated in the research, of which 190 respondents answered from business and natural persons. The results show that digital banking services are offered in our country and the factors that influence their use are: Settlement, as well as age, and trust in electronic services. In order to have a greater increase in the use of digitized banking services, it is necessary to raise awareness of their use depending on the residence and age of the users. It is also necessary to have a greater extension of electronic banking services of ATMs, and POS terminals in our country.

**Keywords:** Digitization; Bank services; Demographic influence; Kosovo.

# ERP benefits in retail industry

Ermira Shehu<sup>1</sup>, Osman Sejfiqaj<sup>2</sup>

University for Business and Technology

Faculty of Information Systems Prishtine, Kosovo

University Haxhi Zeka Peje, Kosovo

[osman.sejfiqaj@unhz.eu](mailto:osman.sejfiqaj@unhz.eu) , [ermira.shehu@ubt-uni.net](mailto:ermira.shehu@ubt-uni.net)

**Abstract.** ERP benefits in different industries are well known world-wide. Since the demands and trends are changing very often, most of the sectors have very high flexibility in changing management. But the more complex the sector is, and more people are involved in daily business, changes are very difficult, the implementation period is longer and it cost more. With this paper, we will investigate and present the results from our research in leading Retail Company in Republic of Kosovo. The aim of the paper is to present the main benefits, categorized, that not only management but also lowest company positions need to understand which will let them focus more in strategic direction, rather than daily business, because of processes automation. Based on preliminary results, retail business must investing in sophisticated ERP systems in order to reduce the operational cycle and to focus more in store-service, reduce the cost in long term, invest in professional staff and increase brand awareness.

**Keywords:** ERP, benefits, next generation, retail

# Good Governance in Management Through E-Governance as a Factor of Development

Gelina Maliqi1

1 UBT-Higher Education Institution, Faculty of Information Systems

Doctor on Information Systems

Lagjia Kalabria, 10000 p.n., Pristine, Kosovo

[lgelinamaliqi@gmail.com](mailto:lgelinamaliqi@gmail.com)

**Abstract.** Good governance is already an important concept that is applied in the global policies of the last decades. This paper will mainly reflect the influences and effects that E-Governance has on the governance of a country, as a digital platform that offers many services to citizens aiming at the inclusiveness of the entire society in democratic governance. This helps to eliminate corrupt phenomena by highlighting values and meritocracy in the proper functioning of governance. Democracy as a liberal system makes a lot of sense by creating space for everyone to be involved and informed about the aspects of E-Governance, which through information systems has given meaning to the real management of elements in the types of central, local or regional governments. even of smaller social groups within it. E-Governance is a means of governance transparency in developing countries by excluding the bureaucratic methods of traditional governance of the past and giving the role due to society in decision-making. The entire complex of the operation of E-Government that is treated in this paper, as well as the managerial effects of various policies through the management of systems that are reflected in all types of government (central, local, ethnic groups or ethnicities, etc.) are already a real indicator of the progress of democratic governments involved in global economic organizations. The aspect of information and quick practices through the use of E-Government show the positive impact or the fulfillment of expectations from both politics and citizens, where transparency and accountability are the most important indicators of the management of information systems and E-Government applications.

**Keywords:** e-Governance, Systems Management, Transparency, Accountability, Good governance.



# Implementation of Anti-Covid-19 measures in Kosovo schools during October and December 2020

Bardha Qirezi, Rrita Cervadiku ,Diana Lekaj

University for Business and Technology

Faculty of Information Systems

Prishtine, Kosovo

[bardha.qirezi@ubt-uni.net](mailto:bardha.qirezi@ubt-uni.net)

[r1ta@hotmail.com](mailto:r1ta@hotmail.com)

[diana.lekaj@ubt-uni.net](mailto:diana.lekaj@ubt-uni.net)

**Abstract.** The outbreak of Covid-19 imposed major restrictions across the globe including in Kosovo, necessitating adaptation of measures and plans that enable safe returning to schools and adequate response to further pandemic outbreaks. As such, in August 2020, the Ministry of Education and Science (MES) adopted guidelines for organising education in conditions of pandemics to be implemented by all schools using three available scenarios: Scenario A, physical presence with strict hygiene and social distancing measures limited to 20 students per classroom with at least 1,5 m distance, Scenario B: Combination of physical and online learning; Scenario C: Distance learning through TV and online platforms. This paper reports the adherence of schools to the MES Anti-Covid-19 measures from a monitoring process of 379 schools in 38 municipalities conducted from October to December 2020. The methodology used involved a site visit combining the interview with the management of the school using the checklist approved by MES and document analysis of evidence collected as foreseen in the checklist. The site visits were conducted in four phases according to a sample selected covering all 38 municipalities in Kosovo. The main results indicate a general mobilisation of schools to implement Anti Covid 19 measures especially regarding task force functioning, preventive hygiene measures and Covid 19 case reporting with difficulties in preparation and implementation of the learning process especially in scenarios B and C that involved distance learning.

# Low-power Network Protocol for Smart Home Automation System: Experimental Study

Dashmir Istrefi<sup>1</sup>

University for Business and Technology

Faculty of Information Systems

Prishtine, Kosovo

[dashmir.istrefi@ubt-uni.net](mailto:dashmir.istrefi@ubt-uni.net)

**Abstract.** In this paper the new Wireless Thread Protocol Standard is introduced and further investigated if Thread is suitable for Smart Home Automation Systems. Some of the issues with Wireless networking technologies compared to Thread are addressed with focus on issues like lack of interoperability, high power requirements, and single point of failure systems. This paper presents a thorough experimental evaluation of the Thread Wireless protocol with the compatible hardware used for home automation. The Thread protocol is based on IEEE 802.15.4 radio standard featuring 2.4 GHz radio connectivity. The paper also describes examples of applications created during study of Thread. This work serves as the first analysis of the Thread protocol in use case implementation with findings that can be comparable with other existing wireless network technologies.

**Keywords:** Thread protocol, Matter, Home Automation, Internet of Things

# Using Machine Learning Tools to Study the Unemployment and Output Relationship in Albania

Blerina VIKAI<sup>1</sup>, Ilir VIKAI<sup>2</sup>, Kozeta SEVRANI<sup>3</sup>

<sup>1, 3</sup>Department of Statistics and Applied Informatics, Faculty of Economy, University of Tirana, Albania

<sup>2</sup>Research Department, Bank of Albania

[blerina.vika@unitir.edu.al](mailto:blerina.vika@unitir.edu.al); [ivika@bankofalbania.org](mailto:ivika@bankofalbania.org), [kozeta.sevrani@unitir.edu.al](mailto:kozeta.sevrani@unitir.edu.al);

**Abstract.** The field of economics is nowadays increasingly employing artificial intelligence to complement and further improve the tools for analyzing and making future decisions. One of the most common machine-learning techniques that are used in forecasting economic indicators is the recurrent neural network method, which has often proven to be useful in capturing non-linearities in data series. This article applies the long short-term memory (LSTM) technique to test for the Okun relationship in Albania. Apart from examining movements in unemployment as predicted by developments in aggregate demand, we test whether a disaggregated version of the Okun's law – by decomposing aggregate demand into various expenditure components of GDP – provides better predictions for changes in unemployment. In-sample estimations suggest that the Okun's law may hold in Albania, but the response of unemployment to output performance is found to vary over different time periods. Non-linear model forecast evaluations show that unemployment rate movements in the second half of 2010s could be more related to private investment and government spending, while private consumption and external trade developments seem to predict it less.

**Keywords:** Machine Learning, LSTM model, unemployment, Okun relationship, Albania.

# A systematic review of Domain Specific Languages in Supply Chain

Tea Tavanxhiu<sup>1\*</sup>, Kozeta Sevrani<sup>1</sup>, Andrea Alberici<sup>1</sup>

<sup>1</sup>University of Tirana, Tirana, Albania

[tea.tavanxhiu@unitir.edu.al](mailto:tea.tavanxhiu@unitir.edu.al)

[kozeta.sevrani@unitir.edu.al](mailto:kozeta.sevrani@unitir.edu.al)

[andrea.alberici@unitir.edu.al](mailto:andrea.alberici@unitir.edu.al)

**Abstract.** Due to the complexity of the supply chains, standard configuration-driven software cannot accommodate the sheer diversity of situations faced by practitioners. It is important to note that these limitations apply both to problems associated with inventory control and to forecasting demand situations. Oftentimes this complexity brings to inconsistency in the data which in turn brings to problems and also disruptions. Some problems can be addressed through domain-specific languages (DSL), which provide an answer to them. A domain-specific language, or DSL, is a computer language that is specialized to a particular domain. These can be incredibly diverse, ranging from common tools such as HTML for web pages to specific languages that are only used by one single piece of software. This paper is a systematic review of the usage of DSL in addressing and solving the main problems with the processes and data in a

Supply Chain.

**Keywords:** Supply Chain, Domain Specific Language, Business Processes, forecasting, process mining.

# RAPID APPLICATION DEVELOPMENT VS AGILE METHODOLOGIES, CASE STUDY: ALUMNI – UBT

Agon Memeti

University for Business and Technology

Faculty of Information Systems

Prishtine, Kosovo

[agon.memeti@ubt-uni.net](mailto:agon.memeti@ubt-uni.net)

**Abstract.** The main idea of this paper is proposing and implementing an application which will allow us posting various events which are organized within the UBT, various job competitions where students of our university can find themselves, and various courses that students can attend if they are interested. On the other hand, this application will contribute to all students of UBT, who have completed the first cycle of studies to be assisted by the university for employment as well as for attending various courses and at the same time to be assisted with each other. Considering that one of the biggest risks of this application is choosing the unsuitable method for its construction, the best method of solving the problem is to get an opinion from some existing IT companies. Alumni-UBT is a web-based application that will greatly contribute to the communication of all students who have completed their studies at the UBT. This application is built using C # programming language for coding, ASP.NET web technology, HTML, CSS, JavaScript, and Bootstrap for its design. The paper also will be explained from the beginning what is the development of applications, the software development life cycle as a result a survey was conducted to which 25 IT companies responded, and thus it was decided which model should be used, RAD or Agile.

**Keywords:** SDLC, application, time, cost, quality, model.

# Software-Defined Passive Optical Network Evolution

Jakup Ratkoceri<sup>1</sup>

University for Business and Technology

Faculty of Information Systems

Prishtine, Kosovo

[jakup.ratkoceri@ubt-uni.net](mailto:jakup.ratkoceri@ubt-uni.net)

**Abstract.** Broadband services have become an important part of our lives. The demand for fast and reliable bandwidth has put a lot of pressure on the telecom and cable industry to build a sustainable, flexible, and future-proof network. Passive optical networks (PON) have become a technology of choice as future proof solution, however traditional PON with proprietary active solution still poses some challenges in providing flexibility and scalability. This reinforces the idea of using open software and white-box hardware converged with software-defined networking and network function virtualization (NFV) to add flexibility and scalability to the passive optical network (PON). With the advent of 5G mobile and the role that PON must play in the x-haul of 5G networks, this scalability and flexibility becomes even more important. Looking at the mobile network, where the trend toward flexibility and simplicity also appeared in the radio access network (RAN) as an open radio access network (Open RAN) a few years ago, these trends are also evident in the optical access network. In the Open RAN of the 5G network, there are two primary technological requirements that provide flexibility and simplicity to the network. First, network function virtualization (NFV) abstracts the legacy, purpose-built network hardware functions used in previous generations (2G, 3G, and 4G) into virtualized, software-based network functions (VNFs). The VNF architecture is hardware independent and can be hosted on any hypervisor and hardware. This enables fast and dynamic deployment, less complex hardware lifecycle management, and lower costs. Second, Software Defined Networking (SDN) is used to decouple the user plane from the control plane and enable centralized management and programmability of network resources through SDN controllers. The convergence of the fixed and mobile network will be possible will the help of SDN and NFV.

**Keywords:** Software, Optical Network, networking, virtualisation, 5G

# The impact of Augmented and Virtual Reality Technology Implementation in Higher Education

Ylber Limani<sup>1</sup>, Elona Bajrami<sup>1</sup>

<sup>1</sup> University for Business and Technology

Faculty of Information Systems

Prishtine, Kosovo

[ylber.limani@ubt-uni.net](mailto:ylber.limani@ubt-uni.net) , [eb40481@ubt-uni.net](mailto:eb40481@ubt-uni.net)

**Abstract.** A strong community is built on a foundation of education. Society needs education to maintain public formation and the quality of life of its members. The transmission of intelligence has been a top priority for civilizations since the beginning of time. In this context, higher education historically has undergone five stages of education starting from Education 1.0 to actual Education 5.0. Each historical period of education has been followed by the many technological achievements of the time. Nonetheless, since Education 3.0 when the application of digital technologies in education has begun, things have changed radically. The purpose of this research is to explain how effectively digital technology is adopted and used in higher education, and what is the impact of such adoption on the teaching and learning process. We assumed the use and of adoption digital technology in education undoubtedly benefit teachers and students in the teaching and learning process. We also assumed educators can deliver their knowledge faster, easier and more effectively. The aim of this paper is to discuss the utilization of Augmented and Virtual Technology (AVR) digital technology in education by empathizing with AVR components, functions, the way of adoption, and the barriers to its acceptance and effective deployment.

**Keywords:** Digital technologies, Augmented Reality, Virtual Reality, Classroom 3.

# The Impact of Technology on Banking Sector and Customer Behavior

Hasan Metin, Bujar Shkodra  
University for Business and Technology  
Faculty of Information Systems  
Prishtine, Kosovo  
[hasan.metin@ubt-uni.net](mailto:hasan.metin@ubt-uni.net)  
[bs42912@ubt-uni.net](mailto:bs42912@ubt-uni.net)

**Abstract,** This research is aiming to examine the impact of technology on banking sector and customer behavior, as there is high trend in technology development and transformation in financial industry that could replace traditional banking services, that impact overall the behaviors of the customers. Through literature review and survey, we did the assessment of impact in customers perception, in order to understand the significance of main touchpoints/channels of interaction between the private individual customers and the banks. The quantitative research is done in Kosova market, since the literature review include also other countries, with focus in development countries. Main findings show that customer experience platform has more significant impact on customers loyalty, or years spent with the bank, comparing to other electronic channels. The customers still value more the opportunity to give feedback of file complain easily for the services. As the e-banking platform or ATMs, do not have significant impact on the longevity of the customer with the financial institutions.

**Keywords:** Banks, Technology, Customer.



# How credit risk affects the bank's performance in the Albanian banking system

Dr. Andromahi Kufo<sup>1</sup>, Anxhela Shanaj<sup>2</sup>

University of New York Tirana

Faculty of Economy and Business

Tirana, Albania

[andromahikufo@unyt.edu.al](mailto:andromahikufo@unyt.edu.al)

[anxhelashanaj@unyt.edu.al](mailto:anxhelashanaj@unyt.edu.al)

**Abstract.** Currently the most developed and regulated system in Albania, the banking system is characterized by high profitability and volatility. Actually, 12 commercial banks are operating in Albania and still the lack of organized capital markets and securities trading does not allow for the existence of investment banks. The main activity that commercial banks are completing is the intermediation of funds channeling them from the surplus entities to the deficit ones. That involves banks taking credit risk and consequently the degree that risk policies allow and the risk appetite of each bank affects their performance. This paper explores how performance measured by return on equity and return on assets is affected by the main variables that characterize the credit risk of banks captured by the non-performing loan ratio and the capital adequacy ratio. For this purpose, quarterly data of the banking sector have been analyzed for the time period 2007-2021 to identify if there is any significant relationship between the variables. Preliminary findings suggest that there is a strong negative and statistically significant relationship between return on equity and return on assets with the non-performing loan ratio, while the capital adequacy ratio does not seem to be statistically significant in the return of banks. This research contributes to the identification of credit risk characteristics that have a greater impact on the profitability of Albanian banks, as well as the development of different approaches to better manage credit risk.

**Keywords:** Banking, system, credit risk, performance measuring, risk managing

# HEDONIC APPRAISAL OF APARTMENTS IN TIRANA AND DURRËS (years 2019-2021)

Assoc. Prof. Dr. Ines Nurja<sup>1</sup>, Anila Kastrati<sup>2</sup>

University of New York Tirana

Faculty of Economy and Business

Tirana, Albania

[inesnurja@unyt.edu.al](mailto:inesnurja@unyt.edu.al)

**Abstract.** Valuation of property is an important part of the land organization framework since it has a direct impact on people's life. (Williamson, 2010). The adjustments within the property estimation can dramatically change the abundance of the organizations and their ability for development. A variety of people may benefit from a better property valuation framework in our society because it reduces the risk of investing in this division and encourages lower interest rates on loans. (Anon., 2010) . The objective of this paper is to empirically demonstrate that, aside from location and address of properties, there are other major factors that influence the price of flats in Tirana and Durrës by developing a hedonistic pricing model. According to the findings, apartments attributes such as area of the living, number of bedrooms and other factors influence the price. The findings also revealed the marginal influence of the number of apartment's spaces, which was dependent on the living area of the apartment. The capital city of Tirana and Durrës are selected for this research paper in order to develop a hedonic price model and I have taken under consideration the properties sold at one of the largest real estate agency "Century 21". The information was limited and depended only on the apartments that was already sold during the last six years.

**Keywords:** Property, valuation, risk reducing, hedonic appraisal, living area, pricing model

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# Attitudes toward Returning Foreign Fighters: The Role of Institutional Trust

Kujtim Bytyqi, Ridvan Peshkopia

Ministry of Defense of the Republic of Kosovo

University for Business and Technology, Kosovo

**Abstract.** The military defeat of the Islamic State (IS) exposed many countries outside the territories that it controlled with the phenomenon of the returned foreign fighters. The new phenomenon of the returning foreign fighters presents their societies with difficult choices of what to do with those new crime categories and those people who have not committed any crime in their home countries, and whose criminal behavior could be mainly categorized as crime by association. Whereas a number of recent public opinion surveys have measured people's attitudes regarding the returning ISIS foreign fighters, we still lack any understanding on what drive such attitudes. In order to overcome such gap, we build a series of hypotheses about the public opinion response to the recent phenomenon of the returning FF. We argue that people's policy preferences toward state response to returning ISIS foreign fighters reflect their opinions on ISIS, trust in country's judiciary and religion institutions and religiosity. Relying on three representative samples of public opinion data that we collected in Albania, Kosovo and North Macedonia in 2018, we try to fill a gap created by the overreliance of current discussion on people's opinions on state response to returning ISIS foreign fighters on data public opinion surveys have been conducted in Western countries, leaving a hot spot of ISIS foreign fighters' origin, the Balkans.

# Human Security: Protecting fundamental freedoms

Gjon Culaj<sup>1</sup>, Gramos Sejdiu<sup>2</sup>

<sup>1</sup> UBT College, Prishtina

gjon.culaj@ubt-uni.net, <sup>2</sup> UBT College, Prishtina, gs58461@ubt-uni.net

**Abstract:** The end of the Cold War has generated a concept of human security, which rapidly achieved great dominance and acceptance and became relevant security approach among academics and policy-makers. Intentionally, as a reactive measure, human security is built upon the idea that humanity is more likely to suffer from daily occurrences such as poverty, spread of diseases, social conflict, hunger, environmental challenges as well as political, social and cultural rights rather than cataclysmic global events. Though the implementation of human security concept took place in the mid-90s, its bases were established in the 40s, with the determination as stated in Preamble of UN Charter “to save succeeding generations from the scourge of war, which twice in our lifetime has brought untold sorrow to mankind.”. Focused on a co-habitat between humanity and state centered concerns as a basis of definition, human security makes well-being the most important issue and as such creates conditions of existence where basic human needs should be in partnership with traditional security. The purpose of this paper is to argue that national security is partial without the human focus standpoint.

**Keywords:** security, concept, human, state, national, international

# Approach toward the Western Balkans and the reflections on National Security

Fatos Rushiti<sup>[1]</sup> and Shpendim Oxha<sup>[2]</sup>

<sup>1</sup> University for Business and Technology, Prishtina 10000, Kosovo

<sup>2</sup> University for Business and Technology, Prishtina 10000, Kosovo

**Abstract.** The Balkans in general is predetermined by its geographical position, to be an integral part of a wider geostrategic developments. The national security of the countries of the Western Balkans has not been seen as disconnected from the rest of Europe for a long time. However, some protracted and hesitant policies towards the Western Balkans have had negative effects not only politically, but also in Security. Russian efforts to influence its policies have not stopped. This also represents the biggest security challenge. Many aspects of national security are also fragile due to some reports within the countries of the Western Balkans.

**Keywords:** Western Balkans, National Security, European Union (EU)

# Resolving the issue of Kurds in Syria through federalism

Ramiz Ismajli<sup>[1]</sup> and Ridvan Emini<sup>[2]</sup>

<sup>1</sup> State University of Library Studies and Information Technologies, Sofia, Bulgaria

<sup>2</sup> South East European University, Tetovo, North Macedonia

**Abstract.** The developments of the last decades in the Middle East, including the war in Syria, are putting above the surface the need to find a long-term solution to the problems. This is the only way to end conflicts and pave the way for sustainable peace. The Kurdish factor was strengthened both politically and militarily. In the turbulent sectarian and ideological map of the Middle East, this factor was the most important ally of all actors on a global scale who were interested in eliminating the danger from "Islamic State". The realities in Syria speak of the impossibility of a centralized state living in peace in Syria. Certain models of federalization of the country have been revealed in recent years and this is no longer a taboo topic. However, the large number of political-military actors involved complicates the path to peace, because they make the list of interests and concerns complicated.

**Keywords:** YPG, Rojava, AANES

# SECURITY IN THE WESTERN BALKANS AFTER THE START OF RUSSIAN AGGRESSION IN UKRAINE

Prof.Ass.Dr. Sheqir KUTLLOVCI, Fatmir HALILI

Doctor of Security Sciences, Professor at UBT College

Master of International Law Sciences,

Senior Policy Coordination Officer at Ministry of Finance, Labor and Transfers

[fatmir.halili@hotmail.com](mailto:fatmir.halili@hotmail.com) [Sheqir.kutllovci@gmail.com](mailto:Sheqir.kutllovci@gmail.com)

**Abstract** Security continues to remain a crucial issue in the Western Balkans region, even after the end of inter-ethnic wars and conflicts for nearly two decades. After the beginning of the Russian aggression in Ukraine, the Balkan region, despite the presence of NATO forces in almost all these countries, there is a fear of eventual conflict, and this stems directly from the Russian influence that has had and continues to have in this region. In this regard, given the role that Russia has had, and still has, in the Western Balkans, it is natural to fear the eventual instigation of conflict in this region as well, even more so, when the strong ties between Serbia and Russia are known, as and the continued feeding of its population by nationalisms and hatreds towards other nations in the Western Balkans. However, the presence of NATO, and the role of the states of this region, excluding Serbia, during these months from the beginning of the Russian aggression in Ukraine, made us come to the conclusion that the beginning of any eventual conflict in this region is almost impossible. The paper deals with the fear that exists in the countries of the Western Balkans for the beginning of any eventual conflict, the real possibilities for conflicts in this region, the role of the USA and the EU in the Western Balkans after the beginning of the Russian aggression in Ukraine, as well as the clarification of state policies of the countries of the Western Balkans in accordance with the Euro-Atlantic future after the beginning of the Russian aggression in Ukraine.



# **Russian Influence on the European Integration Process of the Western Balkan Countries:**

## **A Comparative Analysis**

Alfred Marleku<sup>1</sup>, Dafina Aliu<sup>2</sup>

<sup>1,2</sup>UBT College, Faculty of Political Science, Lagjja Kalabria 10000 Prishtinë,  
Kosovo

{alfred.marleku<sup>1</sup>, da43435<sup>2</sup>}@ubt-uni.net

**Abstract.** This paper examines the relationship between the Russian influence and the EU integration process of the Western Balkans countries. Specifically, the focus is to analyze and measure the impact that the Russian influence — expressed in political, economic and cultural means — has on the region's integration into the EU. It is considered that the Russian foreign policy toolkit inhibits the EU accession process for the six countries of Western Balkans as it interferes with the internal functioning of these countries, which additionally affects the fulfillment of the requirements from the EU. Using a comparative case approach, we have found evidence that Western Balkans' Russian cultural, political and financial support negatively affects the latter's European integration as it obstructs this process. Moreover, the findings of this research confirm the argument that WB countries with Slavic populations are more predisposed to be influenced by Russian influence.

**Keywords:** EU integration, Western Balkans, Russian influence, strategic threats, EU-Russia relations.

# Research-Oriented Studies in Political Science: How Research Collaboration Shapes Southeast European Student Learning Preferences

Alfred Marleku<sup>1</sup>, Ridvan Peshkopia<sup>2</sup>, D. Stephen Voss<sup>3</sup>

<sup>1,2</sup>University for Business and Technology, Faculty of Political Science, Lagjja  
Kalabria 10000 Prishtinë, Kosovo

<sup>3</sup>University of Kentucky, Department of Political Science, Lexington KY 40506-  
0027

{alfred.marleku, ridvan.peshkopia}@ubt-uni.net

dsvoss@uky.edu

**Abstract.** Much of the literature on research-oriented teaching/learning relies on authors' experience sharing as well as their impressions of the outcome of such practices. Whereas we share the same enthusiasm for and commitment to research-oriented teaching, we try to empirically assess student satisfaction with such method. By assuming that student preferences for research-oriented studies in Political Science would reflect their positive research experiences during their studies, we build a series of linear models that would add various qualifiers to that relationship. Thus, our models account for the association of three different research experiences – research with their professors, with their peer students and individual research – with their preference for research-oriented studies in Political Science. Our findings shows that research experience predicts student preference for research-oriented studies, but the direction of that effect depends on whether they performed the research with their professors or other students. Whereas research experiences with other students positively predict preference for research-oriented studies, past research collaboration with professors generated a negative assessment, especially among students with no methodological training, and who did not use their involvement in such research projects to improve their methods skills.

**Keywords:** research-oriented teaching, political science, student learning preferences, research-based learning, Southeast Europe.

# Political-military reflections on Tajikistan, CSTO, and the Russian presence

Adnan Sogojeva<sup>[1]</sup>

<sup>1</sup> State University of Library Studies and Information Technologies, Sofia 1784,  
Bulgaria

**Abstract.** Today's military alliances, as the name suggests, would require member states to provide military support to allies in the event of an attack. The existence of the CSTO is supposed to be able to achieve this goal, but in the eyes of many critics, it is seen as a mechanism of the Russian Federation to extend its influence (and even control) in the space of the former Soviet Union. Tajikistan is one of the CSTO member countries and undoubtedly one of the most unstable countries in recent decades. Unlike many other countries that have withdrawn from the CTO, Tajikistan itself has never questioned this. The ruling elite gathered around President Rahmon, despite official declarations, sees the connection with official Moscow as something vital. The Russian military presence in Tajikistan is also legalized through interstate agreements, and this in itself calls real sovereignty into question. On the other hand, clashes with opposition parties are historically dramatic.

**Keywords:** sovereignty, dependence, military

# **11<sup>th</sup> International Conference**

## **Chapter: Energy Efficiency Engineering**

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# A Review on Energy Generation from the Sun and the Earth

Visar Bejta

Pristina, Kosovo

vb40351@ubt-uni.net

**Abstract.** The earthen and solar thermal capacities are enormous, though only a small part of it is at concrete disposal. In layman's terms, the immensity of the thermal energy is not attainable in its totality to human beings' science and tools. Dimensionally, thermal contours encompass an expanse, be it an area, a region, or a spatial sector, that entails thermal dynamism on the Earth's body of soil or in space. If the thermal dynamism (activity, energy, or source) is not present on the surface of the Earth proper, *thermal dynamism* can refer to the superficial space or area that coincides geographically with the underground thermal reservoir or with the thermal resources hovering above in the sky.

**Keywords:** thermal energy, classification, solar energy, Earth, Sun

# Analysis of loads during the summer-winter season in Substation (SS) 35/10 kV Gjilani I

Eliona Aliu<sup>1</sup>

<sup>1</sup>University for Business and Technology, Pristina, Kosovo

ea63300@ubt-uni.net

**Abstract.** In any country, the increase in population in terms of energy affects the increase in the demand for electricity consumption. The existing electric power grid cannot withstand this growth if it is not invested proportionally. The expansion of this network also means an increase in the likelihood of the appearance of various defects in it. Such faults mean overloads, short connections in the network, etc. But what we come up against is the change in supply over time. Due to the busy network, problems arise during the supply periods. In this paper, the main focus falls on the analysis of the loads during the summer-winter season, especially during the winter, at the 35/10 kV Gjilani I Substation. This substation receives its 35 kV supply from the 110/35/10 kV Gjilani I Substation. , for this reason the analysis of the load flow in the entire district of Gjilan was done by this substation through the advanced SCADA system (System for Remote Control of the Power Network) during the normal summer season, when the loads are below the nominal operating values and during the season winter, when the loads reach the maximum values in the system, which also cause major problems/defects. Such problems are also present at the Low Voltage level of 0.4 kV, but in the case of affecting the Medium Voltage, the Low Voltage is definitely affected as well. . For this reason, the focus in this project will be on the analysis of the load at the Medium Voltage level, without neglecting the damage caused to other devices of the Distribution System (on the transformed side of the voltage).

**Keywords:** Substation, load, faults, SCADA, distribution system, Remote control system, power system.

# Building performance analysis –aspects of energy management and thermal insulation factors influencing

Afrim Sylal\*,

1\*UBT, Str. KALABRIA p.n., Prishtina, Kosova  
afrim.syla@ubt-uni.net

**Abstract.** As energy becomes more costly and demand grows, the use of efficient thermal insulations in buildings becomes more serious. Energy consumption in buildings accounts for 20-40% of the total energy consumption in developed countries. Sustainability analyses on buildings can be accomplished mainly in the areas of energy consumption, daylight intake, solar and shadow relations with building itself and the surrounding settlement, solar radiation gain, wind and natural ventilation. Historically, these analyzes were used to perform with physical models under laboratory conditions. Later, Computer Aided Design (CAD) tools contributed to this process by offering a virtual graphical test environment. This form of work typically divides design and analysis processes, each of which is performed with different applications. It is valuable to be able to conduct early sustainability analyses on High Performance Buildings proposed according to sustainable design principles and physical environment conditions in order to measure whether they fulfill the performance targets and design metrics prior to construction. These analyses may initiate reevaluations and revisions in design decisions for lower operating cost in buildings and improved comfort levels of their occupants.

**Keywords:** Building performance, thermal insulation, factors influencing .

# Challenges, Stability and reliability of the energy network after the continuous addition of renewable energy sources

Agron Bislimi <sup>1\*</sup>, Drenusha Gashi <sup>1</sup>,

<sup>1\*</sup> UBT, University for Business and Technology, Rr. Calabria neighborhood, p.n. 10000, Pristina, Kosovo.

<sup>1</sup> UBT, University for Business and Technology, Rr. Calabria neighborhood, p.n. 10000, Pristina, Kosovo.

[agron.bislimi@ubt-uni.net](mailto:agron.bislimi@ubt-uni.net) , [dg64384@ubt-uni.net](mailto:dg64384@ubt-uni.net)

**Abstract.** Energy from non-renewable sources such as coal, oil, natural gas make up the largest part of the energy obtained. How can grid stability issues be resolved with renewable energy sources? Energy from renewable sources, managing the stability of the electricity grid in changing forms of energy: Ensuring a stable and reliable grid. Across the globe, power grid operators and power producers face new and growing challenges to meet growing demands with reliable energy. The problems faced by operators come from a number of directions, including market liberalization, the variety of decarbonized, distributed and digitized energy production. Stretching existing network infrastructure has two adverse effects, detrimental to network performance. The first is that by overloading existing transmission lines, thermal overloads can occur. There is an increasing number of cases where the frequency and voltage approach or even exceed the permitted limits. Challenges and integration technologies for renewable energies in the grid. Here will also be addressed what are the problems of the stability of the network with renewable energy sources and their solution.

**Keywords:** Non-renewable resources, Sustainable grid, Stability, Frequency, Voltage, Market liberalization



# Component dimensioning for a combined photovoltaic and heat pump system installed in a residential building

Atdhe Neziri <sup>1</sup>, Nexhmi Krasniqi\*, Armend Ymeri<sup>2</sup>,

<sup>1</sup>University for Business and Technology, Pristina, Kosovo

[an50725@ubt-uni.net](mailto:an50725@ubt-uni.net)

\*University for Business and Technology, Pristina, Kosovo

[nexhmi.krasniqi@ubt-uni.net](mailto:nexhmi.krasniqi@ubt-uni.net)

<sup>2</sup>University for Business and Technology, Pristina, Kosovo

[armend.ymeri@ubt-uni.net](mailto:armend.ymeri@ubt-uni.net)

**Abstract.** The intermittent nature of renewable energy sources has attracted much interest in the integration of storage devices towards the deployment of micro-grid systems. In fact, these devices can be placed in the system decoupling energy production from consumption mainly by storing the extra energy produced by RES during the day for eventual use at night. However, for stand-alone systems, calculating the optimal size of power generation systems and storage devices is required for continuous power supply. The energy sector faces a continuous increase in PV battery energy storage systems. These systems are applied to increase the rate of self-consumption of home photovoltaic systems. The energy generated by the PV system can also be used for space heating and domestic hot water to contribute to the decarbonization of the heating sector. Sectorial coupling of energy and heat can be achieved using heat pump systems. The combined system is capable of providing renewable energy for the heating and electricity needs of households. Therefore the Dimensioning of the various system components greatly affects the economics of PV with combined power and heat.

**Key words:** PV system, heat pump, components, residential building

# Egypt Energy Transition

Daad Mohamed Fouad Othman

Faculty of Graduate Studies for Statistical Research, Cairo University, Egypt

Daadfouad@hotmail.com

daadfouad@cu.edu.eg

**Abstract:** As sharing views, experiences and facilitating the exchange of knowledge in the field of energy efficiency are mainly the aim of the conference, sharing Egypt energy transition experience will be a value added specially in the area of environmental impact of energy efficiency. Negative environmental impact on air, water and land, caused by different forms of electricity generation will be discussed and how producing and using electricity more efficiently can reduce both the amount of fuel needed to generate electricity and the amount of greenhouse gases and other air pollution emitted as a result will be explained. How electricity from renewable resources such as solar, geothermal, and wind generally does not contribute to climate change or local air pollution since no fuels are combusted will be measured.. Transition to renewable energy in Egypt and the Situation in 2014, actions taken to overcome Generation shortage, upgrading transition, transition to renewable energy, investment opportunities in green projects, reparation for EGYPT's hosting of COP27, Egypt is an Energy Hub for International Interconnections and Corridors integrated sustainable energy strategy to 2035, and other interactions will be discussed in details in this paper.

**Keywords:** Egypt, Energy, Transition, Efficiency, Environment, Pollution, Electricity, Generation, Pollution, Renewable, Climate Change.

# Energy transition and energy insufficiency in the country

Adlum Ramadani\*, Avni Alidemaj\*\*

\*, \*\* Kosovo Electricity Distribution Company – KEDS, 10000, Pristina, Kosovo

\*\* UBT-Higher Education Institution, 10000, Pristina, Kosovo

e-mail:[adlum.ramadani@keds-energy.com](mailto:adlum.ramadani@keds-energy.com), [avni.alidemaj@ubt-uni.net](mailto:avni.alidemaj@ubt-uni.net),  
[avni.alidemaj@keds-energy.com](mailto:avni.alidemaj@keds-energy.com).

**Abstract:** While the West is facing electricity shortage due to resources, the need for consumption has increased the demand in the market. With the trend of increasing demand and even higher consumption, the need for maximum utilization of natural resources has led governments to undertake intensive actions in order to ease the burden on the electric power system. While the EU has accelerated the process of its energy transition after the new challenges that the new world order is facing, Kosovo is doing its best to align the energy market with Albania on one hand, and to create the necessary infrastructure for the generation of energy from renewable sources on the other hand. This is intended to be achieved through the 2022-2031 Energy Strategy, which gives special importance to renewable energy sources for improving energy supply and reducing the level of pollution from power plants. This paper will address the energy transition process, through which the energy insufficiency in the country will be overcome, while scientific views will be given on the possibilities and capacities available from these sources. In addition, the issue of energy insufficiency will be addressed as a potential threat in relation to international agreements, specifically with the European Network of Transmission System Operators (ENTSO-E).

**Keywords:** Transition, energy insufficiency, energy strategy, renewable resources, ENTSOE, power system.

# Environmental protection through the application of new technologies

Ibush Luzha<sup>1</sup>, Skender Bublaku<sup>1</sup>

<sup>1</sup>Faculty for Civil Engineering and Infrastructure University for Business and  
Technology

St. Rexhep Krasniqi, Prishtine

KOSOVO

ibush.luzha@ubt-uni.net [skender.bublaku@ubt-uni.net](mailto:skender.bublaku@ubt-uni.net)

**Abstract:** In recent years, global warming is becoming an essential and very important issue in terms of daily national and international policies. All these issues are closely related to the general developments on the planet and are also closely related to the development of science and technology. The increase in population has increased the need for more products and with this the development of industry and the development of technology. This rapid development many times and continuously has had impacts in various aspects on the increase of pollution in the living environment, air, land, and water. Using of various information technology devices and mass communication tools has a significant impact on our daily life and also on the environment. The technological changes in IT that have occurred in the last 20 years have caused millions of units to be thrown away as useless equipment without the possibility of recycling. The need for the production of construction materials, energy production, the use of fossil materials, etc. condition the emission of a large number of gases in the air such as CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, and other greenhouse gases which directly affect global warming and the destruction of the Ozone layer in the atmosphere. Even other daily activities such as construction, agricultural activities, use of various chemicals to increase yield, hygiene, and health, all together contribute to the pollution of air, soil, and water and thus to global warming.

**Keywords:** Environment, Global Warming, Industry, New Technologies, Pollution.

# Formulation of the Low-Voltage Ride-Through Curve for Wind Power Integration into Albanian Power System

Eduart Serdari<sup>1</sup>, Mevlan Qafleshi<sup>2</sup>

<sup>1</sup> University of Vlora "Ismail Qemali", Department of Engineering and Marine Technology, Vlora, Albania

<sup>2</sup> UBT-University for Business and Technology, Kalabria, 10000 Prishtina, Kosovo

[eduart.serdari@univlora.edu.al](mailto:eduart.serdari@univlora.edu.al)

**Abstract.** The aim of this study is to formulate a Low-Voltage Ride-Through (LVRT) curve appropriate for the Albanian Power System (APS) by studying several fault situations and times of faults in power grid after integration of large-scale wind power plants. This LVRT curve may help to smooth the effects of operation actions in the wind turbines on the APS. The power system was modeled based on its real technical parameters using Power System Simulation for Engineering (PSS/E) software. It is seen that the formulated LVRT curve prevented the decoupling of the Wind Turbines (WT) and grids during faults, reduced voltage dip, and the system recovered the stability shortly after the fault cleared.

**Keywords:** Wind power, LVRT curve, Renewable energy, Power system.

# Integration of Photovoltaic Energy in the Electricity System of Kosovo

Nexhmi Krasniqi<sup>1</sup>, Armend Ymeri\*, Adi Vokshi<sup>2</sup>

<sup>1</sup>University for Business and Technology, Pristina, Kosovo

[nexhmi.krasniqi@ubt-uni.net](mailto:nexhmi.krasniqi@ubt-uni.net)

\*University for Business and Technology, Pristina, Kosovo

[armend.ymeri@ubt-uni.net](mailto:armend.ymeri@ubt-uni.net)

<sup>2</sup>University for Business and Technology, Pristina, Kosovo

[av37438@ubt-uni.net](mailto:av37438@ubt-uni.net)

**Abstract.** Small-scale electricity generators such as photovoltaic (PV) systems are generally connected to the grid in primary or secondary distribution and are considered distributed. Often, these small-scale generators cannot be connected directly to the grid. Generation technology requires the use of an integration between the generator and the utility distribution network. This paper describes the most common issues and challenges encountered during the grid integration of small-scale photovoltaic power systems. The main problems and appropriate solutions are highlighted in this paper. These include technical and power quality issues as primary issues and economic and research issues as secondary issues. Grid-connected photovoltaic systems have grown dramatically in recent years due to increased global interest in renewable energy sources and increased energy demand. As a consequence, new and modern control strategies must be implemented to improve the efficiency, reliability and stability of grid-connected PV systems. To achieve this, the entire PV system must be tested under different weather and grid conditions. However, the large variety of PV system devices and control algorithms, in addition to the destructive nature of many types of scenarios and faults, make practical PV system testing difficult and expensive. The simulation results show that the model is reliable, stable and suitable for the study of grid-connected PV system.

**Keywords:** Renewable resources, Power grid, Photovoltaic, Impact, Energy

# Investments, the increase of electricity capacities in Kosovo, and the possibilities of energy stabilization

Agron Bislimi<sup>1\*</sup>, Arbesa Nikaj<sup>1</sup>,

<sup>1\*</sup> University for Business and Technology, Pristina, Kosovo

agron.bislimi@ubt-uni.net

<sup>1</sup> University for Business and Technology, Pristina, Kosovo

[an64369@ubt-uni.net](mailto:an64369@ubt-uni.net)

**Abstract.** The investment of 200 million dollars in the energy sector means solving the problem of energy supply in Kosovo: the increase in the quality of the energy consumed as well as its quantity, as well as the integration of renewable sources in the network are the first and most important effects related of this investment, but definitely and fortunately they are not the only ones. Yet, we should not be satisfied with having for the first time such a big budget for energy investments. The growth and expansion of production capacities from coal should follow first since our country has large reserves of coal. Repairs in the existing blocks of existing coal power plants to increase efficiency, the installation of filters such as in the EU countries to reduce the emission of CO<sub>2</sub> gases, as well as the reduction of technical and commercial losses, would complete the general scheme of necessary investments. In this case, the challenges of transforming the conventional grid into an intelligent one must be overcome. In this case, we must overcome the challenges of the transformation of the conventional grid into an intelligent grid. The way to achieve this is straight forward and short: the production of batteries with large capacity with the possibility of storing energy for a long time, and the possibilities of building artificial dams as a suitable source for storage and use of energy in times of crisis. These are the most suitable alternatives for our geographical position, while any further advancement of the system is appropriate. As an additional alternative, it can be the increase of cogeneration capacities for supplying the citizens with heat as much as possible. The advantages of using renewable energy and cogeneration are the reduction of heating costs and at the same time the reduction of electricity use. All the above alternatives or others not mentioned here should be thought of and put into operation in a relatively short time. If the energy system is not intervened in time, we will have a tough winter in terms of energy, tougher than the previous one.

**Key words:** Energy sector, Thermal power plant, New Kosovo, Energy crisis, Energy Storage.

# Main Tests of Power Transformer TR<sub>2</sub> in the Substation 35/10 kV “Xerxe”

Armend Ymeri<sup>1</sup>, Nexhmi Krasniqi\*, Drenusha Gashi<sup>2</sup>,  
Ermira Havolli<sup>3</sup>, Blendi Hashani<sup>4</sup>

<sup>12345</sup>University for Business and Technology, Pristina, Kosovo

armend.ymeri@ubt-uni.net, [nexhmi.krasniqi@ubt-uni.net](mailto:nexhmi.krasniqi@ubt-uni.net), [dg64384@ubt-uni.net](mailto:dg64384@ubt-uni.net),  
[eh64509@ubt-uni.net](mailto:eh64509@ubt-uni.net), [bh44102@ubt-uni.net](mailto:bh44102@ubt-uni.net)

**Abstract.** One of the most important devices in the power system is the power transformer, which supply with suitable voltage all consumers. A thorough analysis of the operation failures of power transformers in the power system, would help to understand the impact of faults on their processes and daily operations. Given that the performance of this device is quite important then it is vital to prevent faults which may occur in it. Transformer failures in power systems not only reduce the reliability of the power system, but also have significant effects on the quality of electricity which is delivered to consumers connected to the network. This paper generally deals with the transformer, its characteristics and phenomena that may occur during its operation, while in a more specific way it deals with the ways of testing of transformers. Inspection and diagnostic testing will always be a key factor in determining the operating condition of the transformer and help to select the appropriate corrective measures to ensure reliable operation which would then result in extending the life of the transformer. For this reason, the paper is focused on the importance of transformer testing, as a result of which the numerous faults that can occur in this device can then be prevented. This paper will discuss the techniques and types of testing applied in the testing of transformers in the Kosovo Distribution System, case study – Transformer TR<sub>2</sub> in Substation 35/10 [kV] “Xerxa”. The working methodology for the preparation of this paper is based on the practical knowledge and scientific research about worldwide experiences for the testing of oil power transformers.

**Keywords:** Oil type transformers, Testing of transformers, Commissioning of transformers, Type of testing.



# Mathematical modelling and simulation of a sanitary hot water for a Dormitory using T\*SOL software

Drita Qerimi 1 , Ardita Jusaj2

1 UBT, Lagjia Kalabria p.n. 10000 Prishtinë, Kosovë

2 Jusaj Kompany, Vitomiricë, p.n. 30000, Pejë, Kosovë

drita.qerimi@ubt-uni.net, [ardita\\_m\\_lokaj@hotmail.com](mailto:ardita_m_lokaj@hotmail.com)

**Abstract.** Electricity is a necessary prerequisite for a sustainable economic development of the Republic of Kosovo. Therefore, efforts are constantly being made to improve the service to consumers and encourage the construction of new energy capacities. Participation of energy consumption in household is still dominant - about 41.4% of the total consumption in Kosovo, 15% of this energy used for domestic hot water. In this study, using T\*SOL software a model of a sanitary hot water has been developed and simulated for a Dormitory nr.8 at student city of Prishtina, Kosovo. The mathematical model is calculated based in demand, means how many liters of hot water are needed for this Dormitory, for this it is necessary to know the number of beds. Based on this the daily average sanitary hot water consumption is 5400[l], knowing that the average sun duration for the city of Pristine is 5.44[h], while the average horizontal irradiation is 3.79[kWh/m<sup>2</sup>] per day. Two different simulation approaches have been considered, based from simulation, for this system that serv for sanitary hot water, the temperature from 45°C to 60°C: the average total solar fraction for Dormitory nr.8 is 54%, the average solar contribution is 51506 kWh, the average CO<sub>2</sub> emissions is 12495.5 kg.

**Keywords:** Renewable Energy, Solar Thermal Energy, Domestic Hot Water, Saving Electricity, CO<sub>2</sub> Reduction.

# NZEB and Photovoltaics in Kosovo. Grid connected PV plants with storage system vs. PV plants without storage

Kliton Bylykbashi<sup>1</sup>, Luca Rubini<sup>2</sup>, Gentian Kicaj<sup>1</sup>, Diellza Morina<sup>1</sup>, Kujtesa Haziri<sup>1</sup>, Riccardo Gasbarrone<sup>3</sup>, Silvia Serranti<sup>3</sup>

<sup>1</sup>UBT, Pristina, Kosovo

<sup>2</sup>CIRPS, Rome, Italy

<sup>3</sup> Department of Chemical Engineering Materials Environment,  
Sapienza University of Rome, Italy

[riccardo.gasbarrone@uniroma1.it](mailto:riccardo.gasbarrone@uniroma1.it), [silvia.serranti@uniroma1.it](mailto:silvia.serranti@uniroma1.it)

[kliton.bylykbashi@ubt-uni.net](mailto:kliton.bylykbashi@ubt-uni.net), [gk64385@ubt-uni.net](mailto:gk64385@ubt-uni.net), [dm64392@ubt-uni.net](mailto:dm64392@ubt-uni.net),  
[kh64386@ubt-uni.net](mailto:kh64386@ubt-uni.net), [luca.rubini@cirps.it](mailto:luca.rubini@cirps.it)

**Abstract.** Considering the increase of global warming and the contribution of energy sources, the minimization of energy consumption in residential buildings, including electrical loads and heating system, is a critical issue. Buildings are at the forefront of this issue due to their high energy consumption. Integrating renewable energy systems into buildings has become a common practice. Net-zero energy building design promotes the energy transition from fossil fuel-based technologies by coupling renewable systems such as photovoltaic (PV) plants with heat pumps for heating and cooling. In other words, the net energy received from the grid is zero over a year. This work aims to align a ZEB under construction in Italy, in the regulatory, climatic, and technological context of Kosovo. Two types of these buildings can be supposed, which can be grid-connected or non-grid-connected. In those that are not connected to the grid, an energy storage system should be installed so that when there is no generation at peak hours, the stored energy is used to supply electrical loads on demand. So, this type of building must be equipped with a system of batteries that help its operation. Thus, more and more, in the future, these types of buildings will be present, which will help preserve the environment, as well as reduce carbon emissions. In this context, the exact size of PV plants plays a central role in the perspective of determining self-consumption schemes. The design objective concerns the minimization of exported and imported energy through an optimized size of the PV plant and the integration of electrochemical energy storage.

**Keywords:** Photovoltaics, NZEB, Storage Systems, Sustainable Economy, Energy Independence, Renewable Energy.

# Performance of wind turbines and generating efficiency in the KITKA Park

Vehebi Sofiu<sup>1</sup>, Sami Gashi<sup>1</sup>

<sup>1</sup>UBT- Higher Education Institution, Rr. Tirana nn, 20000, Prizren, Kosova  
vehebi.sofiu@ubt-uni.net; sami.gashi@ubt-uni.net

**Abstract.** Global demands for electricity have increased the pace of investment in the Republic of Kosovo as well, increasing the generation capacity of clean electricity without fossil pollution. The purpose of this paper is the performance of wind turbines and their generating efficiency in the six-month period of 2022. The latest technology equipment with a generating capacity of 9 wind turbines has been installed in the Kitka Park. The generating capacity is GE 137-3.6 MW with a nominal power of 3.6 MW. The technology used is of the General Electric brand with a total installed capacity of 32.5 MW. The performance of the turbines is affected by the local wind conditions, the speed of the cutting field lines of the turbine blades and the number of turbines in operation. In our research, it has been observed that the generation of electricity in the Kitka Park in the first three months of 2022 has had a small increase in the generation capacity compared to the first period of 2021, the generation capacity in kWh is approximately the same as the annual average. The method of electronic measurement (electrical meter) and the measurements of the operating time are accurate to the millimeter in relation to the measurement distributed in the distribution network.

**Keywords:** Wind energy, turbine performance, turbine efficiency, generating power, electrical measurements.

# PVsyst & PVSol Software Testing

Gentiana Alija, Ines Bula,

Department of Engineering (alijegentiana@alfasolar-ks.com)

Department of Engineering UBT ([ines.bula@ubt-uni.net](mailto:ines.bula@ubt-uni.net))

**Abstract.** Several software programs have been developed to simulate and optimize the photovoltaic system. Engineers and utilities use these simulation tools to facilitate PV system economic pre-feasibility, optimization, technical analysis, and to avoid system overload, poor reliability, and high installation cost. In this paper, two (2) simulation programs with their main features and the developers of these tools are discussed, the software studied are PVsyst, PV\*Sol Premium. The main objectives of this paper are the selection of the right software for the analysis as well as the degradation analysis and the performance analysis of PV systems. The paper presents the performance analysis of the PV solar system with a capacity of 40.2kWp. The simulation results are then compared with actual data.

**Keywords:** photovoltaic system, simulation tools, performance ratio, degradation

# SCADA system in control and automation of distribution system

Armend Ymeri<sup>1</sup>, Nexhmi Krasniqi\*, Drenusha Gashi<sup>2</sup>,  
Fjolla Hysenaj<sup>3</sup>, Shqiprim Zejnullahu<sup>4</sup>

<sup>12345</sup> University for Business and Technology, Pristina, Kosovo

armend.ymeri@ubt-uni.net [nexhmi.krasniqi@ubt-uni.net](mailto:nexhmi.krasniqi@ubt-uni.net) [dg64384@ubt-uni.net](mailto:dg64384@ubt-uni.net)  
[fh36712@ubt-uni.net](mailto:fh36712@ubt-uni.net) sz36381@ubt-uni.net

**Abstract.** The power system is a very complex system because it consists of many interconnected elements. For this reason, there was a need to create automated systems that would enable the power system to be monitored and controlled remotely. One of the systems that enables such a thing is the SCADA system. The importance of having such an integrated system in the electricity network is very great therefore given the importance of this system in the power system then it is important to know the types of this system, the ways of its realization and the advantages. This paper generally deals with the SCADA system, the characteristics of this system and the equipment related to this system. This paper is an attempt to bring realization and application of the SCADA system in the distribution network of Kosovo. The overview of SCADA system implementation, the evolution, the data acquisition process and the using of SCADA in the distribution network will be described within this paper. Therefore, the purpose of this paper is to present in more detail the digitization of substations through the SCADA system. This paper will discuss the types of SCADA system equipment (elements) in the Kosovo Distribution System and their installation in power substations, connection between the control center and the power substation. The working methodology for the preparation of this paper is based on the practical knowledge and scientific research about worldwide experiences for SCADA system software.

**Keywords:** SCADA, distribution network, control system, automation system, Remote Terminal Unit.

# Selectively coordinated overcurrent protection for power systems

Rexhep Shaqiri

<sup>1</sup>UBT University for Business and Technology – Prishtinë – Kosovo

[rexhep.shaqiri@ubt-uni.net](mailto:rexhep.shaqiri@ubt-uni.net);

**Abstract.** The power system of Kosovo is a compact and integrated structure in hierarchical aspect. It plays an important role in the process of transmission and distribution energy to the consumers. Based on this importance analysis is necessary in order to estimate the medium and long term plans of production of electric energy and development of the power generation plants. The connection of wind farm the topology of distribution network, which will lead to the change of current detected by relay protection, and the sensitivity and scope of protection will be affected. Selective earth fault protection are an important task for operation, reliability and supply security in distribution systems. Since, the single line to earth faults are the most common fault type in power networks, much attention must be paid in earth faults issues. By the increase in the power consumption, stricter voltage quality limits and load diversity, distribution systems become more complex than traditional systems. The main reasons of this complexity can be listed as; embedded generation, underground cable usage, different neutral earthing practice, different parallel feeders' numbers and loop formations in primary feeders. These features require re-evaluation of classical nondirectional over-current protection and coordination habits. The large number of protection devices which spread on the network makes the protection systems study and review it difficult especially manually because it needs long time and much effort, because these settings must be coordinated among a lot of protection devices on the entire network. The major issue is the contribution of the whole system to the faulty point. The goal of this paper is to review the existing protection and coordination, evaluate the sensitivity and selectivity of the protection system across the network and implement new coordination with the proper setting by using ETAP.

**Keywords:** Connection, Wind power plant, Protection, Selectivity, Short circuit current, Improvement, Power system

# Sources of Surface Water Pollution in Lake Radoniq

Faton MALOKU<sup>1</sup>, Florent DOBROSHI<sup>2\*</sup>, Krenar DOBROSHI<sup>3</sup>

<sup>1</sup> University for Business and Technology, Pristina, Kosovo

[faton.maloku@ubt-uni.net](mailto:faton.maloku@ubt-uni.net)

<sup>2\*</sup>University of Mitrovica “Isa Boletini”, Mitrovica, Kosovo

[florentdobroschi@hotmail.com](mailto:florentdobroschi@hotmail.com)

<sup>3</sup>College of Medical Sciences “Rezonanca”, Prishtina, Kosovo

[krenar.dobroschi@gmail.com](mailto:krenar.dobroschi@gmail.com)

**Abstract.** This study aimed to assess the status of the water quality of lake Radoniq. To create knowledge about a water environment that can be used for human life and economy and to meet the needs of drinking water, for irrigation of lands for industry and to give management suggestions based on anthropogenic impact and ecological conditions. The evaluation of the anthropogenic impact on this river was done through physico-chemical, microbiological analyzes and the determination of trace metals. Samples were taken from the Lumbardhi Deçan and lake Radoniq in four periods of 2021 and analyzed for pH, EC, Alkalinity, Total Hardness, Dissolved Oxygen, Iron SAA, inorganic forms of N and P, and total suspended solids, etc. The environmental risk assessment was done by comparing the results achieved with international standards. The methodology during laboratory analysis is based on ISO standards. The results of the research showed a pollution in the Lumbardh river of Deçan as a supplier of the Radoniq lake as a result of anthropogenic and ecological impact as some parameters had values higher than the standard values. From the results of the water analysis done during 2021 in Lumbardhin i Deçan, we notice an increase in parameters such as: Turbidity, dissolved oxygen, nitrates, phosphates, KMnO<sub>4</sub> expenditure. This increase in parameters is expressed especially in the part where it is inhabited by the population and pollutes the water with uncontrolled spills. Significant control of water quality along the river flow and in the lakes is required.

**Keywords:** water, parameters, lake, analysis, anthropogenic.

# The development of sustainable mobility in Prishtina. 2025 scenario vs 2030 scenario.

Kliton Bylykbashi 1 , Visar Mehaj 1 , Qlirim Gurguri 1 , Giuseppe Bonifazi 2

1 UBT, Prishtina, Kosove

2 Department of Chemical Engineering Materials Environment, Sapienza  
University of Rome, Italy

[giuseppe.bonifazi@uniroma1.it](mailto:giuseppe.bonifazi@uniroma1.it), [kliton.bylykbashi@ubt-uni.net](mailto:kliton.bylykbashi@ubt-uni.net) [gg64388@ubt-uni.net](mailto:gg64388@ubt-uni.net) [vm64391@ubt-uni.net](mailto:vm64391@ubt-uni.net)

**Abstract.** Mobility and transport are experiencing one of the most eruptive revolutions. Innovations in digitalization and alternative energies, established in previous decades, are unleashing their potential on the streets, forming the bases of smart mobility. Smart mobility is one of the core subjects of any smart city. It involves optimizing transport and communications in order to consolidate new standards of sustainability, efficiency, safety and air quality. A city's transport network is its lifeblood and, to build a smart city, we need to think seriously about smart mobility, which will define the future of urban development. Due to increasing congestion and related side effects which include pollution, accidents, and waste of time in general, there is an immediate demand for smart mobility in almost all cities. So, different solutions merge and interrelate in smart mobility. Many of these solutions are based on IT and they include a vehicle navigation system, e-parking, e-ticket, info-mobility signalization, demand-responsive transport, car sharing, bike sharing, public transport live tracking. All of these evolve into specific benefits, such as improved health regarding to a massive decrease in CO<sub>2</sub> emissions, thanks to air quality, fewer traffic accident victims or reduced traffic congestion. In this document, it aims to demonstrate a systematic of smart cities and mobility, also analyzing the current condition of the smart capital Prishtina with regard to smart mobility, showing the different challenges that Kosovo is facing in this respect. An evolutionary scenario of the capital will be proposed, with a 3- and 7-year vision, analyzing local regulations on the basis of European ones and illustrating the benefits that intelligent mobility generates at an environmental, economic and social level.

**Keywords:** Smart mobility, Smart City, Smart Mobility Technology, Transport, Pollution, Traffic Congestion, Smart Future, Renewable Energy, Energy Saving.



# The international energy crisis and the impact of the war on the increase in the price of oil - Case study Kosovo

Besa Veseli

Institution of Higher Education, UBT-College, Energy Efficiency Engineering

[besa.veseli@ubt-uni.net](mailto:besa.veseli@ubt-uni.net)

**Abstract** The energy crisis, that of food security, high inflation, the increase in the price of electricity, oil, gas, food, raw materials, etc., are the main issues of global concern. The conflict created by the crisis of the Russia-Ukraine war, in addition to the human and human consequences, is causing great economic and financial consequences not only in the economy of the two warring countries, but in the entire global economy and of course also in the economy of our country. The global economy is struggling with the energy crisis and rising crude oil prices. The war in Ukraine has influenced the increase in the price of oil and its derivatives, a consequence of which was also felt in Kosovo. The purpose of the paper is to elaborate how the energy crisis and the impact of the increase in the price of oil immediately affect the case of the Ukraine War and how the countries of Europe and also Kosovo face this situation that also affects the economic aspect. The energy crisis is also being felt in European countries. The energy sector in Kosovo today faces major challenges, including: Dependence on old lignite-fired thermal power plants, which do not guarantee a regular supply of electricity, nor the appropriate flexibility of the electrical system, and in turn cause greenhouse gas (GHG) emissions and pollution. Currently, the participation of renewable energy sources (RES) in electricity consumption is only 6.3%, while the use of RES in the energy sector is dominated by biomass-based sources that are mainly used in the heating sector. High energy consumption (and therefore high energy costs) relative to GDP and population due to a number of factors, including: high network losses, inefficient buildings and inefficient equipment (e.g., for space and water heating), both in the residential and commercial and public sectors. The rapid development of digital capitalism is leading to a tremendous increase in the demand for electricity around the world, and this increase in demand has only just begun. New technologies, the emergence of the Internet and everything related to it (artificial intelligence, data storage, online sales, connected networks, etc.) are leading to a tremendous increase in the demand for electricity all over the world.

**Key words:** energy, oil, international economy, inflation

# The possible energy production from municipal solid waste

Fijona Kurshumliu, Sami Makolli

<sup>1</sup> Department of Energy Efficiency and Management,  
UBT University of Business and Technology,  
Pristina, Kosovo,  
fijonak@gmail.com

**Abstract.** Nowadays, a more rational flow of municipal waste management is considered necessary due to environmental, economic and social demand. The desire to reduce the accumulated amount of waste and the increased demand for energy, led to the development of the third generation of waste management. Such systems are waste-to-energy plants that are considered friendly to the environment and society. In this topic, the main focus is the possibility of producing energy from municipal solid waste and the economic and environmental benefits. Initially, qualitative methodology was used to see the situation, potential, and problems of the energy sector as well as that of the waste management, and then the quantitative methodology was used to present the statistical data of these two sectors. In order for the results of the possible potential energy production to be as valid as possible, we have based our data in the experiences and data of the European Union countries, and adapted those to the state of Kosovo. A critical review of known municipal waste management practices and processes will contribute to give investors and institutions an idea of market potential, practical technologies, and environmental and economic impacts.

**Keywords:** wastewater, hospital effluents, pollution loads, treatment plant, photo catalytic reaction

# The state of the electrical sector in republic of kosovo: case of study

Alush Mexhuani<sup>1\*</sup>, Bujar Jupaj<sup>1</sup>, and Alban Shala<sup>1</sup>, Kliton Bylykbashi<sup>1</sup>, Luca Rubini<sup>2</sup>

<sup>1</sup>UBT, Pristina, Kosovo

<sup>2</sup>CIRPS, Rome, Italy

[luca.rubini@cirps.it](mailto:luca.rubini@cirps.it), [kliton.bylykbashi@ubt-uni.net](mailto:kliton.bylykbashi@ubt-uni.net)

**Abstract:** Electricity is considered a necessary good for the economic development of a country. Strengthening the electricity sector in particular and the energy sector in general is a priority of each country that aims at meaningful economic development and the well-being of citizens. The recent crisis with the high prices of electricity in the international markets has made all the countries that do not fulfill the local consumption, as a result of the limited capacities of electricity production, to reflect, in this group of countries also Kosovo is included as a country with almost the smallest power system in Europe. Kosovo is considered an electric energy system that has reached the peak load of approximately 1.4 [GWh] in 2021, compared to the national production it turns out that almost 50% of this peak load must be imported in order to meet the rate. In addition to the almost centralized production of electricity from thermal power plants, which use coal as a source of energy, Kosovo does not have enough diversity in the use of other sources for the production of electricity. These two (2) main problems and the ambiguity in the objectives of the state institutions for the exact definition of future steps, has caused the electricity sector to find itself in the deepest crisis since the post-war of 1999. The scientific paper will mainly be based on the explanation and comparison of the existing conditions of the electrical energy systems of the Western Balkan countries such as:

- Albania;
- Bosnia and Herzegovina;
- Kosovo;
- North Macedonia;
- Serbia;
- Montenegro;

The current situation and development trends in these countries will be discussed, comparing each other, but with special emphasis the current situation and development trends in the Republic of Kosovo will be analyzed, both from the aspect of legal infrastructure, policies and technical capacities of the use of resources, whether renewable or non-renewable. The scientific paper aims to clearly reflect the problem faced by the electricity sector in the Western Balkans, it will mainly be concentrated in the Republic of Kosovo, considering that such a paper will help as a reference for other studies that may arise in this field.

**Key words:** Electricity, Republic of Kosovo, power system, production, consumption, load, energy market, renewable resources, non-renewable resources, thermal power plant.

# **“Impact of Building Envelopes and Climatology on renovation of public buildings stock in Kosovo in terms of energy efficiency, sustainability environmental and socio-economic issues.”**

Fuat Pallaska 1 :

1 UBT -University for Business and Technology, Prishtina, Kosovo

fuat.pallaska@ubt-uni.net

**Abstract** Purpose - Sustainability environment and the standards criteria application for the building stock refurbishment for renovation of the public buildings in Kosovo plays a positive role in the terms of energy efficiency and also have impact on social-economic aspects and better quality of life. Findings -The old stock of existing buildings, which were built after the second world war and until 1970/80, did not take into account the insulation of buildings, and for this reason not only in Kosovo, but also in Europe and around the world, also this building stock are the largest consumer of primary energy. Kosovo, although not yet a member of the EU, has pledged to reduce energy expenditure as well as the emission of CO<sub>2</sub> and greenhouse gases in the atmosphere, alongside EU member states, and in accordance with policies, legislation, strategies and the goals emerging from the European Commission and EPBD directives, as a leading organization in Europe dealing with climate changes and global warming issues. Research limitations/implications - European Energy Community and European Commission has issued new objectives that aim for the Europe to be the first climate-neutral continent in the world by 2050. With this reason, the renovation of existing buildings is one of the goals that must be met to achieve this objective. because more than 40% of energy expenditure comes precisely from the construction sector. Therefore, the renovation of existing buildings in public sector is an inevitable step to improve the energy performance of the public buildings, also has to increase the comfort and in general the quality of life and activity in them, creating a sustainable environment. Knowing that these buildings are big consumers of energy, then precisely with their renovation lies the potential of great energy savings. Potentially Increasing the Energy Building Performance (EBP), can be achieved the better sustainability and durability of this building stocks, consumer can save the energy and the internal condition for living will be better also and health conditions. During the Energy application measures on renovation of the building stocks, also we find a lot challenges and barriers to the sustainability and better condition for life. Used Methodology - methodology used for this research paper is comparative qualitative and hypothesis which is used for the further determination of this problem is based on calculation forms with applicable Software creating the Building Certificate Performance and classification for each category of building. Where after the analyses this results would be compare with the region state and other in the field of energy efficiency statement. My research also obtained for aims to explain the barriers and challenges in the field of energy efficiency in existing buildings especially in Public sector in Kosovo.

**Keywords:** Building Envelopes and Climatology, Sustainability environment, emission of CO<sub>2</sub> and greenhouse gases, Energy Building Performance (EBP), Energy consumers, energy efficiency, public buildings.

# **11th International Conference**

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# Watermelon seeds germination study by shortwave infrared-based hyperspectral imaging techniques

Giuseppe Bonifazi<sup>1,2\*</sup>, Riccardo Gasbarrone<sup>1</sup>, Silvia Serranti<sup>1,2</sup>,

<sup>1</sup> Department of Chemical Engineering Materials Environment,  
Sapienza University of Rome, Italy

{giuseppe.bonifazi, riccardo.gasbarrone silvia.serranti}@uniroma1.it

<sup>2</sup> Research Center for Biophotonics, Sapienza University of Rome,  
Polo Pontino, Italy

{giuseppe.bonifazi, silvia.serranti}@uniroma1.it

**Abstract.** The germination capability of watermelon (*Citrullus Lanatus*) represents the proportion of seeds that produce healthy seedlings within the parameters and time frames specified by the approved techniques of analysis. Rapid and non-invasive analytical processes for seed quality control must be established in order to guarantee the quality and germination of seed production up until the point of use. In this scenario, Near Infrared (NIR)-based HyperSpectral Imaging (HSI) represents an optimal solution for quality control applications in different sectors. The purpose of this study was to explore the utilization of methods based on the use of HyperSpectral Imaging (HSI) in the Short-Wave Infrared (SWIR) spectral region (1000–2500 nm) to test the germinability of watermelon seeds. A Partial Least Squares–Discriminant Analysis (PLS-DA) model was built in order to recognize non-viable seeds from viable ones. The obtained classification results are promising, reaching a sensitivity of 0.72 and a specificity of 0.98 for not germinated seed.

**Keywords:** Seeds; Germinability; Watermelon; HyperSpectral Imaging; Short-Wave Infrared; HIS; SWIR; Partial Least Squares–Discriminant Analysis.

# Microstructure Based Modeling of Dual Phase 600 Steel

Labinot Topilla 1 \*, Serkan Toros 2 , Shkelzen Shabani 3 , Halil Demolli 3 .

1 UBT – Higher Education Institution, ,2 Nigde Omer Halisdemir University, 3  
University of Prishtina “Hasan Prishtina”

**Abstract.** The purpose of this study was to examine the microstructure of DP600 steel using both experimental and finite element modeling methods. The microstructure is generated using 2D modeling and 3D synthetic modeling processes. The goal was to demonstrate the significance and procedures of each step taken until the final modeling component was completed.

# Reaching consensus for new terms associated with particular areas of specialist knowledge using Blockchain Technology

Vehbi Neziri<sup>1\*</sup>, Ali Caka<sup>2</sup>, Nebi Caka<sup>3</sup> and Ramadan Dervishi<sup>4</sup>

<sup>1</sup> UBT – Higher Education Institution, Lagjja Kalabria, 10000 Pristina, Kosovo

<sup>2,3,4</sup> University of Prishtina "Hasan Prishtina", Prishtina, Kosovo

vehbi.neziri@ubt-uni.net

ali.caka@uni-pr.edu

nebi.caka@uni-pr.edu

ramadan.dervishi@uni-pr.edu

**Abstract.** As the accelerated development of technology requires the development of professional terminology, this simultaneously sets forth the need for developing a solution that aims to reach a consensus on new terms associated with particular areas of specialist knowledge. While these solutions are required in the language of the terms' origin, they often become more challenging in other languages since differing viewpoints on a term's variations are more common. Using the consensus mechanism of blockchain technology, this paper aims to find a suitable method or algorithm for reaching an agreement among professionals and other interested parties on these new terms relating to certain fields of specialized knowledge. The analysis incorporated in the paper tests the known consensus algorithms of blockchain technology to find the most suitable algorithm that can be used to bring professionals, both linguists, and other actors, to contribute to reaching a collective decision by using a blockchain network through distributed nodes. In this case, the group of participants of the blockchain would comprise the language's decision-making institutions, the relevant field professionals, and the wide users, such as the general population. Given the different participants involved, the paper proposes that the weight of the nodes' vote vary for each of the three categories of blockchain participants, allowing for an internal consensus in each category before the final consensus is reached.

**Keywords:** Blockchain, Consensus, Agreement, Terminology, Algorithm, Terms.



# Identifying suspicious human activity using artificial intelligence and deep recognition

Vesa Morina<sup>1</sup>, Shqipe Sejdiu<sup>2</sup>

1, 2 UBT – Higher Education Institution, Lagjja Kalabria, 10000 Pristina, Kosovo

vesa.morina@ubt-uni.net

ss36902@ubt-uni.net

**Abstract.** Every day we are on the move, we are active during the process of going to work, to studies and for all our daily activities that complete our day. We as human beings always tend to be different from each other, this difference manifests itself with its positive and negative sides. The negative actions of many people have a legal categorization in terms of punishment, but history has taught us that there are moments and cases when malicious actions are of such a level that the punishment that can be given to a person for that action is not proportionate with the damage caused. To prevent malicious actions, it has always been invested in technological assets and people who, by monitoring them, could contribute to society to prevent suspicious actions that could bring irreparable consequences and high human losses. Human interest reputation is a critical but difficult topic to study and predict through technological devices. In this paper, we will present the techniques, practices and algorithms used to identify suspicious human activities using artificial intelligence and deep recognition.

**Keywords:** Activity recognition; Deep learning; Human activities; Artificial intelligence.

# Static Analysis of Welded Bead of Street Lighting Construction

Fidan Smaili<sup>1\*</sup>, Armend Sylaj<sup>1</sup>, Besart Berisha<sup>2</sup>, Afrim Gjelaj<sup>2</sup>

Drilon Beqiri<sup>3</sup>

<sup>1</sup> UBT – Higher Education Institution, Lagjja Kalabria, 10000 Pristina, Kosovo

<sup>2</sup> University of Prishtina, Faculty of Mechanical Engineering

<sup>3</sup> University “Isa Boletini” Mitrovicë, Faculty of Mechanical and Computer Engineering

fidan.smaili@ubt-uni.net

**Abstract.** Public lighting is for sure of unique importance for our safety, but it is also crucial to ensure that the street lighting construction does not fail due to static load or when unpredicted additional loads (like wind storms) could potentially be subjected to. To ensure that the failure of the street lighting construction will not happen, the mechanical properties of the weld joint should be known. Tensile test and hardness measurements were used as destructive examination methods and visual inspection using the welding gauge as a nondestructive examination for measurement of reinforcement and weld size. Finally, static analysis is performed by simulation in SolidWorks software, and the results were compared with the experimental test. Based on the results should be no concern, if the inspection is done properly before, during, and after welding by IWS (International Welding Specialist) personnel and in accordance with WPS (Welding Procedure Specification) and PQR (Procedure Qualification Record).

**Keywords:** Static analysis, Weld bead, Heat Affected Zone, Mechanical properties, SolidWorks software.

# Off-Line Part Preparation for Laser Powder Bed Fusion Production

Betim Shabani<sup>1</sup>, Fisnik Osmani<sup>2\*</sup>, Vladimir Dukovski<sup>2</sup>

<sup>1</sup> UBT – Higher Education Institution, Lagjja Kalabria, 10000 Pristina, Kosovo

<sup>2\*</sup> University of Mitrovica “Isa Boletini”, Ukshin Kovaçica, 40000 Mitrovica, Kosovo

<sup>2</sup> University St. Cyril and Methodius in Skopje, Faculty of Mechanical Engineering,  
1000 Skopje, North Macedonia

[betim.shabani@ubt-uni.net](mailto:betim.shabani@ubt-uni.net), [fnik.osmani@umib.net](mailto:fnik.osmani@umib.net), [vladimir.dukovski@mf.edu.mk](mailto:vladimir.dukovski@mf.edu.mk)

**Abstract.** There are constant improvements in recent years in different manufacturing technologies. One of them is additive manufacturing (AM), specifically metal AM category, laser powder bed fusion (L-PBF). Despite the high range of freedom in design and capability for producing complex parts with this technology, there is a need for the comprehensive study of preparing the parts for production, taking into consideration orientation, and support generation. In this research, the selected parts for investigation have different shapes and are tested in different orientation angles. After the orientation optimization based on three factors: build time, supports volume, and distortion tendency, the optimal solutions for support generation for particular parts were selected. The aim of the work has been to optimize the part preparation based on factors that are important for technical and economic aspects. Further work as a more comprehensive study should employ the simulation analysis (macroscale and mesoscale) as the input for the preparation of the part for L-PBF production.

**Keywords:** Additive Manufacturing, Laser Powder Bed Fusion, Build Time, Supports Volume, Distortion Tendency.

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# CinemaVerse

Rmadani Euron<sup>1</sup> and Leka Hizer<sup>2</sup>

<sup>14</sup> UBT, Higher Education Institution, Kosova

[<sup>1</sup>er49018@ubt-uni.net](mailto:er49018@ubt-uni.net), [<sup>2</sup>hizer.leka@ubt-uni.net](mailto:hizer.leka@ubt-uni.net)

**Abstract** The concept of the project is the software that enables the online purchase of tickets for the movies that customers want to watch. The software is intended to be part of a cinema which offers a wide range of films and events such as: the CINEPLEX cinema in Kosovo or the ABC cinema in Pristina. Within this software the user will be able to view information about any movie that is showing that he wants, the information will be of this type: name, genre, price and trailer of the movie. Movies will be categorized by genres (action, comedy, horror, etc.), so the user will be able to search for movies according to their favorite genre. Cinemas will also be able to host events in their spaces, these will be seen by site users and they will be able to buy tickets (if available) to go to that specific event. Events can be such as birthday parties, film fairs, replays of old films, etc. The main goal of CinemaVerse is to facilitate and not waste the time of customers to watch the list of films that are available in all cinemas in Kosovo.

# Profit from integration of Big Data, Cloud Computing and Internet of Things in Industry 4.0

<sup>1</sup>Eljona Proko, <sup>2</sup>Alketa Hyso, <sup>3</sup>Dezdemona Gjylapi

<sup>1,2,3</sup> Computer Science Department, University "Ismail Qemali" Vlora

**Abstract** - New emerging digital technologies such as artificial intelligence, virtual reality, augmented reality, cloud computing, blockchain, robotization, the Internet of Things, big data, etc. have produced a powerful disruptive effect in almost all areas of our existence and have radically changed the way we live, work, learn or relax. Without consciously realizing it, everyone is adapting to the digital era. The potential benefits of Internet of Things are limitless and IoT applications are changing the way we work and live, opening new opportunities for growth, innovation and knowledge creation. The fourth industrial revolution (Industry 4.0) aims at transforming traditional industries into intelligent ones by incorporating innovative technologies. There are rich variety of technologies which are covered by the internet of things and they are industrial IoT, internet of services, customer IoT, Industry 4.0, and many more. Industry 4.0 enables physical assets to be integrated into intertwined digital and physical processes thus creating smart factories and intelligent manufacturing environments. Internet of Things (IoT) is a rapidly growing technology that has drastically contributed to the Industry 4.0 realization. IoT pursues to pervade our everyday environment and its objects, linking the physical to the digital world and allowing people and "things" to be connected anytime, anywhere, with anything and anyone ideally using any network and service. IoT is regarded as a dynamic and global network of interconnected "things" uniquely addressable, based on standard and interoperable communication protocols and with self-configuring capabilities. This paper presents and analyzes the concept of Industry 4.0 and the benefits it offers as well as the relevant key technologies, industrial internet of things, cloud computing and big data.

**KeyWords:** Cloud Computing, Internet Of Things, Big Data, Industry 4.0

# Solar Energy Forecasting in Vlora using Artificial Neural Networks and Open Data

Dezdemona Gjylapi<sup>1</sup>, Alketa Hyso<sup>2</sup>, Eljona Proko<sup>3</sup>, and Sokol Gjylapi<sup>4</sup>

<sup>1,2,3</sup> Computer Science Department, University "Ismael Qemali", Vlora, Albania

<sup>4</sup> Local Police Directorate, Vlora, Albania

**Abstract.** Solar energy forecasting is considered an essential scientific aspect in supporting efforts to integrate solar energy into electricity grids. This is because grid operators need to know how much solar energy the system is producing so they can optimally engage solar and other energy sources to balance demand and production. Improving solar power forecasts will allow the electric grid to be more flexible and adapt to changing conditions. This will in return help minimize outages and the overall cost of service. Artificial Neural Networks (ANN) are powerful tools for modeling and estimating Solar Energy even though they use few inputs. To train the networks, a dataset of daily meteorological time series for a period of 12.5 years (2010–2022) was collected for the city of Vlora by Weather Data Service Visual Crossing, and publicly accessible, was used. The meteorological parameters used to estimate the solar energy were the daily values of the maximum, minimum and average temperatures; relative humidity; daylight hours; precipitation; wind speed; solar radiation, weather description as inputs. The output is a daily solar energy in MJ/m<sup>2</sup> day. Various ANN models have been designed and implemented by combining various meteorological data. The optimal model for estimating solar energy was an MLP with one hidden layer where the inputs were numerical values for maximum and minimum temperature, daylight hours, solar radiation, humidity, and weather description. The data used is Open Data, which makes the model very suitable to use for other regions as well. To evaluate the difference between measured and predicted values by ANN models, mean absolute error (MAE), mean square error (MSE) and correlation coefficient (R) were determined. For the 6-5-1 topology - which is one of the best topologies - the R, MSE, and MAE values were found to be 0.999, 0.019, and 0.0868, respectively. The obtained results showed that the ANN model can be successfully used to estimate the daily solar energy for Vlora and other locations.

**Keywords:** Solar radiation; Solar Energy; Artificial Neural Networks; Forecasting; Open Data;

# APPLICATION OF BLOCKCHAIN TECHNOLOGY IN BANKING TRANSACTIONS

PhD Hasan Metin

Valdrin Qerimi

**Abstract** Blockchain is a technology that is developed using a combination of different techniques such as mathematics, algorithms, cryptography, economic models. Blockchain is a public book of all cryptocurrency transactions that have been digitized and decentralized. In this paper we will measure through the blockchain application how much is hashrate and how much is the benefit for currency transactions in blockchain, results will be obtained by comparing the relationship between transactions and transaction cost and hashrate. The paper presents the stages of development of blockchain technology, the advantages of this technology over banking transactions, the introduction of this technology in the banking industry, will also note the use of blockchain in the transport of goods and in the storage of valuable goods. During this thesis it will be noted how the blockchain presents both an opportunity and a risk for banks. Due to the elimination of the broker during the transaction process, as well as providing a more secure registration system. Blockchain technology has evolved from the initial cryptocurrencies to smart contracts of the new era and has been applied in many areas, we will compare blockchain privacy requirements between security and privacy. There will also be developed in the C ++ programming language.

**Keywords:** Blockchain, C++, cryptography, decentralized, banking, transactions ,hashrate .



# Application of shortest path algorithms in OSM. Case study-Prishtina

Mirlinda Reqica<sup>1</sup> Diellza Berisha<sup>2</sup> Bukurie Imeri Jusufi<sup>3</sup> Blinera Zekaj<sup>4</sup> Azir Jusufi<sup>5</sup>

<sup>1</sup>[mirlinda.reqica@ubt-uni.net](mailto:mirlinda.reqica@ubt-uni.net) <sup>2</sup>[diellza.berisha@ubt-uni.net](mailto:diellza.berisha@ubt-uni.net)

<sup>3</sup>[bukuri.imeri@unt.edu.mk](mailto:bukuri.imeri@unt.edu.mk)

<sup>4</sup>[blinera.zekaj@ubt-uni.net](mailto:blinera.zekaj@ubt-uni.net) <sup>5</sup>[azir.jusufi@ubt-uni.net](mailto:azir.jusufi@ubt-uni.net)

**Abstract** In this paper, in addition to the necessary theoretical review of graph theory, we will in particular discuss shortest path algorithms and their implementation. In the second part, we will implement these algorithms on the data exported from OpenStreetMaps in a programming language. OpenStreetMaps (OSM) is an interactive free world map. In the case study of this paper, our goal is to load the road network of Prishtina into a graphical programming language structure and implement the algorithms for finding the shortest path and finding the optimal route between two selected points.

**Key words:** graph, shortest path, algorithm, OSM, Prishtina, programming language

# The Evolution of Cybersecurity

Egzon Kamberi<sup>1</sup>

University for Business and Technology, 10000 Prishtinë, Kosovo

[ek35299@ubt-uni.net](mailto:ek35299@ubt-uni.net)

**Abstract.** The evolution of cyber security has always been determined by a kind of cause-and-effect trend: growth in new digital technologies followed by the discovery of new vulnerabilities, for which new cyber security measures must be identified. However, the scale and impacts of today's cyber-attacks are now so critical that digital society must prepare before attacks occur. Cyber security resilience along with measures to deter attacks and new ways to avoid vulnerabilities in software and computer networks must be improved, developed and supported. Cybersecurity is a concept related to computer engineering, focused on ensuring the privacy, confidentiality and integrity of data transmitted or stored on an internal network. This concept is gradually becoming more important as the complexity of the integration between the physical and cyber dimensions increases, providing hackers with opportunities to gain or access remote administration of various networked systems for nefarious purposes. whose attacks have become increasingly common and sophisticated, raising the concern of a wide range of society, such as individuals, businesses and governments. In an increasingly technology-dependent society, the number of cyber-attacks increases as does the need for information. The concept can be understood as the protection of the cyber environment, as well as the physical dimensions of the information technology that support it and the users whose information, data and interests may be vulnerable to cyber-attacks. Thus, it becomes a relevant topic as society seeks security in its information infrastructure to contain system vulnerabilities, which may endanger social and national well-being in situations of cyber terrorism, system sabotage, information warfare.

**Keywords:** Evolution, Cybersecurity, Privacy, Threats, Network

# Using matrices in cryptography

Faton Kabashi\* Lamir Shkurti Besnik Qehaja Hizer Leka Mirlinda Selimaj

UBT, Higher Education Institution, Pristina, Kosova

(e-mails: faton.kabashi@ubt-uni.net; besnik.qehaja@ubt-uni.net; hizer.leka@ubt-uni.net;

mirlinda.slimaj@ubt-uni.net).

Faculty of Contemporary Sciences and Technologies, South East European University

Tetova, North Macedonia, (e-mail: ls29773@seeu.edu.mk)

**Abstract:** Data encryption has become a necessity with the increase in sensitive data being stored and transmitted through computers. Cryptography is the science of encoding and decoding messages, which is commonly used in everyday life to store sensitive information such as credit card numbers. Cryptography has many purposes, the first being to ensure the confidentiality of communication, then the integrity and authenticity. Cryptology is the use of algorithms and codes to increase the security of data. The study of cryptography requires proficiency in various mathematical concepts such as algebraic theory, probability, statistics, discrete mathematics, algebraic geometry, complex analysis, number theory, algorithms, binary numbers, prime factorization, and other key areas. A mathematical discipline used for data encryption in Cryptography is Linear Algebra, especially matrices operations. In this paper, our aim is to explore the applications of matrices in the fields of cryptography. The purpose of this paper is to show that mathematical concepts, in this case "matrices" are playing a major role in computer graphics, computer science and robotics. This study would be important to other researchers because the research findings of this study will benefit researchers with literature review to expand their research in the application of matrices. It helps address and provide background information for researchers who would like to conduct further research in this area.

**Keywords:** Matrices, inverse matrices, cryptography, data encryption, data decryption

# Internal Security threats in Information System - threat protection at all stages of the chain

Amet Shabani\*. Fatos Rushiti\*\*.

\*University of Business and Technology UBT Pristina , 10000  
Kosovo(amet.shabani@ubt-uni.net)

\*\*University of Business and Technology UBT Pristina , 10000  
Kosovo(fatos.rushiti@ubt-uni.net)

**Abstract:** External threats are threats that come from outside the organization, where they are usually carried out by hacktivists from other countries, even competition. Common methods include ransomware, phishing attacks and hacking. Insider threats originate from the organization itself and are usually carried out by a current or former employee, a contractor, a business associate, etc. Insider attacks can be malicious or unintentional. Common types of insider threats include unauthorized data transfer, abuse of employee privileges, and data sharing. Insider threats have been a concern for organizations for a long time, but with digitalization and the growth of the network, they have become even more prevalent. Over the years, some of the largest and most expensive data breaches were caused by insider actors. The Tesla data theft case, which involved large amounts of highly sensitive data being transferred to unknown third parties by a malicious insider, clearly illustrates the danger of insider threats. Similarly, Suntrust Bank suffered a data security breach caused by an employee who stole the records of 1.5 million customers. The goals of this paper are to identify vulnerabilities that consist of vulnerabilities in a system that can be exploited by attackers that can lead to dangerous impact. This paper seeks to provide clarity on the different types of insider threats you should be aware of and the controls and processes that can be used to protect against them.

**Keywords:** Data, Internal Data Security, Internal Threats, Protection from Data Security Threats, etc.

# Computational Data Analysis - Classification

Lavdim Beqiri 1 and Greta Ahma 2

[lavdim.beqiri@ubt-uni.net] [greta.ahma@ubt-uni.net]

1 UBT - Higher Education Institution, Faculty of Computer Science and Engineering,  
Prishtine, Kosove

2 UBT - Higher Education Institution, Faculty of Computer Science and Engineering,  
Prishtine, Kosove

**Abstract.** The research discusses Computational Data Analysis Classification, a short summary of the classification models (regression, classification and clustering), the particular focus is on classification. For a case study, for data analysis, it has been selected classification method. The comparisons were made by classifying and analyzing the processes from the datasets between algorithms: Naïve Bayes, Support Vector Machine (SMO), J48 Decision Tree, and KStar.

**Keywords:** Machine learning, algorithm, text, machine learning algorithms,

weka,

classification



# Modelling Zero Energy Buildings using Fuzzy Cognitive Maps

Lazaros Avgeris\* and Peter P. Groumpos,

University of Patras. Lazaros Avgeris [lazaros@energy-greece.com](mailto:lazaros@energy-greece.com) and  
[groumpos@ece.upatras.gr](mailto:groumpos@ece.upatras.gr)

**Abstract.** In recent years the concept of Zero Energy Building (ZEB) has attracted international interest and has led to the beginning of a new generation of buildings. There is a worldwide attempt to define the concept of ZEB and specify a methodology of modeling its operation. Defining the parameters that should be taken into consideration and classifying ZEBs helps that attempt. Energy management and intelligent control are playing a key role in the successful operation of a ZEB, improving its performance, and reducing its consumption. The method of Fuzzy Cognitive Maps (FCMs) is appropriate for problems with many parameters, where mathematical modeling and calculations have difficult or, in some cases, impossible solution. ZEB is a complex system and therefore it should be as "intelligent" as possible and the use of FCMs in ZEB operation modeling is a very promising field. In this paper simulation results will be presented based on real data of big public and private buildings.

# Models for Load and Price Formation in Deregulated Electricity Markets

Dr. Valbona Karapici Prof.Assoc. Dr. Arseno Gjipali

**Abstract.** In an electricity market, generation companies and electricity consumers need to meet in a marketplace to agree on the quantity of electricity to be produced and consumed and its relevant price. In the electricity sector, the decision-making process needs to be based on accurate forecasts of electricity demand and system load. For this reason, forecasting electricity demand and prices has emerged as one of the major research fields of interest in electricity markets. An underestimation of energy demand by a supplier may lead to higher operational costs because the additional demand needs to be met by procuring energy in the market, potentially at an unfavourable balancing price. Load forecasting is thus at the core of all the decisions made in energy markets as it is vitally important for determination of spot prices, production optimisation and cost-effective supply to all end users. To participate in the market, a decision-maker needs an accurate estimate of how much energy is needed at a certain time. Supply and demand fluctuation, often related to changes in weather conditions, may cause energy prices to increase by a factor of ten or more during peak hours. Over the past 20 years, the electricity industry has been subject to significant restructuring. The old concept of a centralised and monopolised industry, where electricity supply was seen as a public service, has been replaced by the idea that a competitive market is the most appropriate mechanism to supply energy to consumers while maintaining a high level of reliability and improving overall cost-effectiveness. The restructuring of electricity markets removes price controls and encourages entrance into a free market. Producers, retailers, and consumers are able to interact in a market where the common target is to maximise their profits. The process of deregulation and the introduction of competitive markets have totally reshaped the landscape of the traditionally monopolistic and state-controlled power sectors. Generation is deregulated as competition develops between a sufficient number of companies to promote an efficient wholesale electricity market. Load forecasting is a necessity for all consumers or retailers because actual consumption in real time may differ from expectations, implying that additional volumes may have to be sold or procured in short-term markets (e.g. balancing markets) at unfavourable prices, incurring an accounting or opportunity loss. Also, as generators are keen to optimise their hydropower and thermal power plants, variations in demand will alter spot prices and their optimum production plans. In light of the above, the purpose of this paper is to present a brief consideration of models and methods for load and price forecasting. It will provide sufficient grounds for proposing adequate models of load and price dynamics.



# Graphic presentation and statistical data analysis of the number of children in the families of 7th grade students in a lower secondary school in the Republic of Kosovo

Nazmi Misini 1

1 UBT, Higher Education Institution, Kosova

1 nazmi.misini@ubt-uni.net

**Abstract.** Statistics is a science that researches, examines and studies the quantitative conditions of various phenomena: demographic, social, cultural, educational, economic, agricultural, commercial, industrial, communicative, physical, chemical, etc. Therefore, statistics is classified in the social sciences, which object the study has mass phenomena and the characteristics of their variation. These mass phenomena include, for example, the population, economy, agriculture, industry, communication, culture, education, etc., each in their quantitative aspect and the corresponding quantitative characteristics, including the time and space factor. Today, statistics is not limited to numerical information needed for the state, but has entered all social pores and natural sciences. Without statistics, they cannot function efficiently: accounting, finance, marketing, production, economy, biology, physics, sociology, psychology, pedagogy, astronomy, medicine, etc. Every day we come across numbers of statistical data, expressed in numbers or percentage. The graphic presentation is one of the most efficient tools both for the visual description of the results of multiple surveys of one or several characteristics of a statistical population, as well as for discovering the relationships and connections between these characteristics or between changes in time and space of phenomena. Graphical representation facilitates understanding much more quickly than the presentation of a multitude of figures, performing a great service to science and constituting a very valuable aid to statistical studies. Statistical analysis is of particular importance because through it we can compare data and research results for two or more phenomena, in time and space. This paper will deal with the main concepts in statistics, including concrete examples. First, we will explore the statistics of birth data at the level of the Republic of Kosovo, and then we will separately analyze our case of the number of children in families of students in a class in a lower secondary school in a village in Kosovo.

**Keywords:** children, family, class, school

# Healthcare Information Privacy and Security

Nita Qarri ,Besnik Qehaja  
University for Business and Technology,

10000 Prishtinë, Kosovo

[nq38911@ubt-uni.net](mailto:nq38911@ubt-uni.net)

[besnik.qehaja@ubt-uni.net](mailto:besnik.qehaja@ubt-uni.net)

**Abstract.** The impact of information technology has reached its peak in recent decades. The use of electronic devices has replaced traditional ones in various areas of life. Recent years have witnessed the widespread availability of electronic health care data systems. Large amounts of civil society were generated in medical centers such as hospitals, clinics or other institutions. This paper highlights the role of technology in further improving and advancing the healthcare industry. Among its key parts are data on private care, privacy and security which will comprise the core of this entire discussion. In this paper we also examine the two most used architectures in mobile applications of this nature (MVC and MVVM), while showing the advantages and disadvantages of both sides, allowing the reader to understand which is the best architectural solution for these systems. Also, the comparison of the two eHealth mobile applications chosen for this purpose, provides information and real examples of how all these principles shown on paper, come to life in a real application, focusing on the main worrying health factor of the recent years, the Covid19 pandemic.

**Keywords:** eHealth, Privacy, Security, MVC, MVVM, Covid-19

# Transformation of the modern radio signal in modeling the sensor transmission between concentric antennas for frequency integration

Vehebi Sofiu<sup>1</sup> , Faton Kabashi<sup>2</sup> , Greta Ahma<sup>3</sup> , Lamir Shkurti<sup>4</sup>

1, 2, 3,4 UBT - Higher Education Institution, Rr. Tirana pn, 20000, Prizren, Kosova  
vehebi.sofiu@ubt-uni.net; faton.kabashi@ubt-uni.net; gretlamirshkurti@hotmail.com;

greta.ahma@ubt-uni.net

**Abstract.** The radiation model of a sensor antenna concentrated in the direction of the large Spider 5.0 radio telescope, with a radiant representation of the waves affected by the location of the earth-related antennas. Modeling the angle of boot on the horizontal and vertical plane is a depressive character of simulative communications between sensory antennas in the radiofrequencies system classified as effective wave propagation signals. The research has peacefully algorithm the communications of functions produced by generating simulative frequency between structured antennas distances. of presenting elements with a wide spectrum characteristic that allows a large surface telescope to operate. The form of the telescope function by technology represents the modern Radio Telescope which offers the reliability of the high-level 1420MHz frequency for radio Visitors emissions that come at distances through the Radio Universe Soft- ware that record and control signal registration. The telescope works with full capacity with optimal power even in bad conditions atmospheric preserving the importance of transmission of communication lines. The antenna is in perfect pre -prior form and frequency waves are simulated with wavelengths in the Mat lab program. Magnetic wave generating frequencies depend on different wavelengths of about 0.05 inches or 1024 channels each with 61 kHz. The effectiveness of the rules used is focused on finding points in the spatial frequency domain which minimizes the noise effects. 150-250 Words.

**Keywords:** Sensory antenna, radio waves, telescope, spatial frequency, 3D Eon-XR.

# Security and Privacy Requirement Analysis of Blockchain-based e-Voting System

Blerina Rrmoku<sup>1</sup> Edmond Jajaga<sup>2</sup>  
University for Business and Technology,

10000 Prishtinë, Kosovo

[blerina.rrmoku@ubt-uni.net](mailto:blerina.rrmoku@ubt-uni.net) [edmond.jajaga@ubt-uni.net](mailto:edmond.jajaga@ubt-uni.net)

**Abstract.** Taking into account the importance and sensitivity of the voting process, more and more efforts are being made to ensure that the entire process is carried out safely, accurately and as quickly as possible. As we know, conventional voting does not always guarantee that all these are achieved, because there are many factors that prevent the development of an ideal electoral process, such as cost of time and efforts needed for tallying and counting results, cost in papers, etc. In this paper we will present an approach for building an electronic voting system, which will contribute to increasing credibility to election results, building trust in electoral management and also improving the overall efficiency of the electoral process. We will introduce a view of how this system would look like with the use of Blockchain technology, we will also present some of its features with the help of programming design patterns. Finally, we will present a table that contains all the mechanisms used that cover the most important requirements needed for a blockchain based voting system.

**Keywords:** Electronic Voting, Security, Privacy, Blockchain Technology, Microservices



# Traffic light design through digital circuits and simulation through the Electronic WorkBench program

Bashkim Çerkini 1 dhe Fakiye Zejnullahu 2

1 University of Applied Sciences in Ferizaj

2 University of Applied Sciences in Ferizaj

**Abstract.** In this work, the work of two traffic lights located at a crossroads is designed through digital circuits or flip flop. The semaphores will be connected to each other directly, and D-type flip-flops are used to change the semaphore states, while JK-type flip-flops are used for the two- and three-bit asynchronous counters. Two-bit asynchronous counters are used for counting to three while three-bit ones are used for counting up to seven. The clock pulse has a period of 1 second or 0.001kHz. The work of these two traffic lights was also simulated in the Electronics Work Bench (EWB) program and it was ensured that these traffic lights work in a regular and synchronized manner.

# Healthcare Application for Blood Donation

Greta Ahma<sup>1</sup> , Elton Boshnjaku<sup>2</sup>

<sup>1,2</sup>UBT, Prishtina, Kosova

greta.ahma@ubt-uni.net<sup>1</sup>, elton.boshnjaku@ubt-uni.net<sup>2</sup>

**Abstract.** The healthcare system is one of the most important and complex industries that provides various healthcare services to meet people's health needs. It also includes efforts to influence the determinants of health, as well as more direct health-improving activities. This paper presents a high-level system to bridge the gap between blood donors and people in need of blood. The Blood Donation System application is a way to synchronize people and hospitals with their care. It is an online network through which the Hospital uses to check the availability of the required blood and can send for blood to the nearest hospital for blood or blood donation requests. The person who wants to donate blood can find the nearest blood hospital by using the blood donation application.

**Keywords:** Healthcare, Blood Donation System, Donor, Hospital, Patient.

# Fuzzy Cognitive Maps and Explainable Artificial Intelligence: a critical perspective

Ifigeneia Athanasoula<sup>1</sup>, Ioannis D. Apostolopoulos<sup>2</sup>, and Peter P. Groumpos

<sup>1</sup> Department of Electrical and Computer Technology Engineering, University of Patras, Patras,

Greece; ece6932@upnet.gr, groumpos.ece.upatras.gr <sup>2</sup> Department of Medical Physics, School of Medicine, University of Patras, Patras, Greece; ece7216@upnet.gr

**Abstract.** There is a lot of discussion regarding the interpretability and explainability of modern artificial intelligence methodologies, especially in applications such as medical imaging. Scientists argue that the most vital drawback of complex algorithms is their behaviour as black boxes. It is agreed that applying the newly developed methods in industry, medicine, agriculture, and other modern fields, such as the Internet of Things, requires the trustfulness of the systems from the users. Users are always entitled to know why and how each method made a decision and which factors played a role. Otherwise, they will always be wary of using new techniques. Fuzzy Cognitive Maps are an evolving computational method to model human knowledge, provide decisions handling uncertainty, and are the core of many modern intelligent systems. Numerous studies in various fields employ FCMs, which report top performance, sometimes proving to be superior to several Machine Learning models. In this work, we analyze the nature of FCMs in terms of their trust, transferability, causality, informativeness, and transparency, providing the reader with several success stories that reveal the suitability of FCMs in many domains.

**Keywords:** Fuzzy Cognitive Maps; Explainability; Explainable Artificial Intelligence; Interpretability



# Intelligent Modeling for the food chain using Fuzzy Cognitive Maps

Ifigeneia Athanasoula<sup>1</sup>, Ioannis D. Apostolopoulos<sup>2</sup>, and Peter P. Groumpos

<sup>1</sup> Department of Electrical and Computer Technology Engineering, University of Patras, Patras,

Greece; ece6932@upnet.gr, groumpos.ece.upatras.gr <sup>2</sup> Department of Medical Physics, School of Medicine, University of Patras, Patras, Greece; ece7216@upnet.gr

**Abstract.** The development of a methodological framework for evaluating the quality of a “product” on a food chain is an important issue for the management of agriculture applications. This paper addresses this issue from an intelligent point of view. The main objective of this research is the systematic examination of all main processes that make up this complex process and, at the same time, the consideration of a model for the evaluation of the quality of the “product”, considering the “intelligent modelling” of the quality of all the individual stages of the agricultural process in delivering a high quality “product” to the customer. For evaluating and extracting the quality index, the intelligent control technique is used as a non-parametric method for managing the data that make up the final decision. Intelligent Control is the result of the application of computational intelligence in system control. It addresses the problem of Control from a distinct perspective from the conventional control model. Knowledge and experience of experts form the core of the process and are the basis for the learning method that makes up the control model. The objective of an intelligent controller is its function like the human operator, with the same rules but without its weaknesses, while avoiding non-consistency so that there is a uniform and standardized framework for managing the parameters that lead to the final solution. Prior to the formulation of the evaluation method, exactly the parameters that affect the quality of the “product” must be defined, and at the same time, they will be analyzed. The entire production process is initially divided into three (4) basic steps:

1. “Product” collection, where the “product” is collected from the farm,
2. “Product” processing, which includes all the individual steps required for the qualitative upgrading of the raw material,
3. Packaging and storing the final “product”,
4. Distribution and delivery of the “product” to final “consumers”.

In this research study, the methodology of Fuzzy Cognitive Maps is used. To implement it on the generic approach just described, the farm product of milk is used. Simulation studies are performed, and the results are presented in the presented paper. Discussion of the promising results is discussed, and future research is presented.

**Keywords:** Fuzzy Cognitive Maps; Food Chain

# Evaluation of Grad-CAM for explaining Deep Learning's decisions on various medical imaging datasets

Ifigeneia Athanasoula<sup>1</sup>, Ioannis D. Apostolopoulos<sup>2</sup>, and Peter P. Groumos

<sup>1</sup> Department of Electrical and Computer Technology Engineering, University of Patras, Patras,  
Greece; ece6932@upnet.gr, groumos.ece.upatras.gr

<sup>2</sup> Department of Medical Physics, School of Medicine, University of Patras, Patras,  
Greece;

ece7216@upnet.gr

**Abstract.** Deep Learning (DL) is a well-established pipeline for feature extraction in medical and non-medical imaging tasks, such as object detection, segmentation, and classification. However, DL faces the issue of explainability, which prohibits reliable utilisation in everyday clinical practice. The present study employs the well-established Grad-CAM algorithm to assess the decisions of a Deep Learning framework in various medical image classification tasks. Eleven datasets are utilised, involving images from SPECT, CT, Microscopy, and X-Ray, which correspond to numerous diseases, including Lung Cancer, Coronary Artery Disease, and COVID-19. The main conclusion of the research is that DL with Grad-CAM might reveal important image features. However, it is observed that on many occasions, Grad-CAM shows the model's inefficiency in discovering the right locations, even in the classification accuracy is at a top level.

**Keywords:** Deep Learning; Grad-CAM; Explainability

# Using polynomials over the GF(2) field for detecting and correcting errors in cyclic codes

Diellza Berisha<sup>1</sup> Bukurie Imeri Jusufi<sup>2</sup> Mirlinda Reqica<sup>3</sup> Blinera Zekaj<sup>4</sup> Azir Jusufi<sup>5</sup>

<sup>1</sup>[diellza.berisha@ubt-uni.net](mailto:diellza.berisha@ubt-uni.net) <sup>2</sup>[bukuri.imeri@unt.edu.mk](mailto:bukuri.imeri@unt.edu.mk) <sup>3</sup>[mirlinda.reqica@ubt-uni.net](mailto:mirlinda.reqica@ubt-uni.net)

<sup>4</sup>[blinera.zekaj@ubt-uni.net](mailto:blinera.zekaj@ubt-uni.net) <sup>5</sup>[azir.jusufi@ubt-uni.net](mailto:azir.jusufi@ubt-uni.net)

**Abstract** Developments of the last decades in the field of digital communication have created a close connection between mathematics and computer engineering fields. The Galois field  $GF(2)=\{0,1\}$  is of great use in Computer Science, along with the polynomials with coefficients from the field  $GF(q)$ . If we denote by  $V(n,q)$  the vector space over the field  $GF(q)$ , then the linear binary code  $C[n,k]$  is nothing but a subspace of the vector space  $V(n,q)$ . The transmission of word codes through channels with obstacles of different natures, errors may occur, which we must detect and correct. Cyclic codes are an important group of linear binary codes. They are widely used in the theory of codes, since they are easily applied, particularly in their polynomial form. In this paper we will provide the algorithm for detecting and correcting errors that may occur in cyclic code.

**Key words:** Vector space, linear code, cyclic code, word code, detection, polynomials

# A Review on the Emerging Technologies for Air Pollution Monitoring and Management

Zhilbert Tafa

University for Business and Technology, 10000 Prishtina, Kosovo

zhilbert.tafa@ubt-uni.net

**Abstract.** Air pollution (AP) is one of the main causes of lung cancer and stroke. In order to minimize the negative health impacts, AP should be properly monitored and managed. Conventional systems are expensive and sparsely deployed. As such, they cannot provide the required spatiotemporal resolution. This paper reviews the emerging technologies for real-time AP monitoring based on Wireless Sensor Networks (WSNs). The review is focused on data acquisition and dissemination, as well as on the design and implementation issues. The role of Machine Learning (ML) in AP monitoring and management is also considered.

**Keywords:** WSN, Air Pollution, Sensors, Machine Learning.

# Traffic light design through digital circuits and simulation through the Electronic WorkBench program

Bashkim Çerkini 1 dhe Fakije Zejnullahu 2

1 University of Applied Sciences in Ferizaj

2 University of Applied Sciences in Ferizaj

**Abstract.** In this work, the work of two traffic lights located at a crossroads is designed through digital circuits or flip flop. The semaphores will be connected to each other directly, and D-type flip-flops are used to change the semaphore states, while JK-type flip-flops are used for the two- and three-bit asynchronous counters. Two-bit asynchronous counters are used for counting to three while three-bit ones are used for counting up to seven. The clock pulse has a period of 1 second or 0.001kHz. The work of these two traffic lights was also simulated in the Electronics Work Bench (EWB) program and it was ensured that these traffic lights work in a regular and synchronized manner.

# 11th International Conference

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# Social aspects in the folks architecture of Prizren

Dr. Nexhat Çoçaj

UBT – Institucion i Arsimit të lartë, Lagjja Kalabria, 10000 p.n., Prishtinë, Kosovë  
[nexhat.cocaj@ubt-uni.net](mailto:nexhat.cocaj@ubt-uni.net)

**Abstract** In this paper, through the values of the folkloric architecture of Prizren, we will focus on some social aspects, which were actually the main reasons that influenced the architectural heritage. To address the social functions of the folk architecture of Prizren, it means to address the anthropological mindset through the life that developed within those walls. Folk architecture has been the presenter of life in certain environments, namely it has been a communicative language equivalent to today's social networks. Baxha, the gazebo of the house, ceilings, windows and doors with wooden decorations with the symbol of the eagle, sun, snake, talisman, etc., have symbolized social categories and the wishes of the family members.

**Key words:** folkloric architecture, social categories, symbols, baja, etc.

# The early heritage of the Christian cult in the Illyrian-Arberian lands

Pajazit Hajzeri

<sup>1</sup> Faculty of Architecture and Spatial Planning, UBT College – Higher Education Institution, Prishtina, Kosovo

[pajazit.hajzeri@ubt-uni.net](mailto:pajazit.hajzeri@ubt-uni.net)

**Abstract.** The social, political, economic, social and cultural circumstances that existed at that time in the Arab world brought one of the most emblematic figures in the entire history of mankind, Jesus Christ (Messiah). Jesus Christ was born as the savior of evil and the abandonment of many idols, and in their name the impoverished population was mistreated, violated, enslaved to the point of inhumanity. The period in which Christ lived involved two different religious worlds, the Jews on the one hand and the pagan Romans on the other. Both of these religious worlds were going through ideological turmoil at the moment, where great changes were expected. Jesus Christ was born in the period of the emperor Augustus and died in the period of the emperor Tiberius. He brought another image to the religious spiritual world, which, of course, had its roots in the Jewish religion, but at the same time broke away from it and continued an autonomous path in itself.

**Key words:** faith, monotheism, Christianity, basilica, cult, culture.



# Design of green areas and recreational spaces: Case study City park, Prishtina

Nexhat Balaj<sup>1</sup>, Hyzer Rizani

UBT - Higher Education Institution, Lagjja Kalabria p.n., Prishtina, Kosova

Email:nexhat.balaj@ubt-uni.net

**Abstract.** This paper highlights and promotes ecological and aesthetic role of spontaneous and cultivation flora in sustainable landscape planning. People depend on fresh air, natural attraction and landscape which indicate public natural perception and social behavior. The purpose of this paper is to present how quality of public spaces and urban vegetation contribute positively to people's quality of life. Location of this study was in Prishtina city in Republic of Kosovo. The study was conducted in City park in Prishtina, between April 2020 and June 2022. This park is located near the city center, which is frequented by a large number of visitors. Urban green spaces comprise a range of habitat types that cross a continuum from intact remnant patches of native vegetation, brownfields, gardens, and yards, to essentially terraformed patches of vegetation that may or may not be representative of native community associations. Urban vegetation provides a wide variety of ecosystem services, including air quality improvement, climate regulation, and other elements that enhance urban environmental quality. Green and open areas can be public or private properties and are differentiated by their function, their ecological value and their belonging to other land use types.

**Key words:** Design, green space, public space, plants, vegetation, park.

# Seismicity study in the period of time 2008-2021, in Istog - Pejë- Deçan seismogenic zone, that are related to the Shkodër-Pejë active seismic transverse fault zone

Shemsi Mustafa<sup>1</sup>, Lulzim Beqiri<sup>2</sup>, Besian Sinani<sup>3</sup>, Visar Krelani<sup>4</sup>,

1,2,3,4 UBT - Higher Education Institution "Lagja Kalabria"

p.n. 10000 Prishtine <http://www.ubt-uni.net>

<sup>1</sup>. Seismological Network – GSK

**Abstract.** The territory of Kosovo in terms of seismicity, represents a zone, where indigenous strong earthquakes can be expected as well as an earthquake originating from the seismic sources in the bordering regions with the neighboring countries, such that might cause significant damage on the built environment yielding great material and human losses.

The tectonic regime northwest and west of territory of Kosova consists mainly of extensive processes that result in rift zones, such tectonic fault of Istog and tectonic fault of Peja, Studies of seismic hazard are particularly interesting, due to the existence of important urban areas in this seismogenic region, such as a seismogenic area of Peja, where hundreds of earthquakes occurred within the period of 2008-2021, the largest magnitude was 5.2 Richter scale and intensity of 7 MMI Historical data report the occurrence of several significant events in the Peja region, earthquake ( $M > 6.0$ ) year 1662. The study of the seismicity of the seismogenic zone Peja revealed continuous seismic activity, organized into background and strongly clustered seismicity. Seismic events from 2008 to 2021, clearly show the connection with the Shkodër-Pejë active seismic transverse fault zone. Having in mind that in the last two decades, the region is undergoing very fast urbanization characterized with extensive infrastructure development and building modern high rise structures with different use: residential, administrative, commercial and buildings belonging to essential facilities such are schools and hospitals it is necessary to be aware of the seismic hazard to which the built environment can be exposed and all possible consequences of such event. In order to be able to assess the seismic hazard, it is necessary to integrate data from various field such as seismology, geology, tectonics, etc.

**Keywords:** Seismicity, Seismotectonics Tectonic, seismogenic

# Solar Photovoltaic Roofs and Fasades of Residential Buildings as a Compromise between Design, Cost and Environment towards the Sustainable City and Community and Climate Action Goals

Mevlan Qafleshi<sup>1</sup>, Eduart Serdari<sup>2</sup>, Ermal M. Qafleshi<sup>1</sup>

<sup>1</sup> UBT-University for Business and Technology, Kalabria, 10000 Prishtina, Kosovo

<sup>2</sup> University of Vlora “Ismail Qemali”, Faculty of Technical and Natural Science, Department of Engineering and Marine Technology, Vlora, Albania

**Abstract.** The electrical energy sector in Kosovo with 80% is the greatest contributor of the emission of CO<sub>2</sub> as the main gas in the green house effect (GHE). Only 5% of produced energy is from renewable sources (RES). These data are far below the UN and EU targets for downsizing of GHG emissions for 50% and 95% by 2030 and 2050, respectively. Currently around 50% of world’s population live in urban area and trends show that by 2050 this would be up to 70%. The urban population, with up to 80%, is the greatest consumer of energy and due to that contributes with more than 70% of GHG emissions. United Nation General Assembly has set a framework with 17 Sustainable Development Goals (SDG) for a better living in cities. All these SDG are integrated and complementary, but in this research more relevant are considered Goal 11-Sustainable city and community, and Goal 13-Climate actions. These two are dealt with the focus for the case of Kosovo towns. This paper aims to turn the idea of climate change into action by using solar photovoltaic panels (PV) either on top of the roofs and/or facade of residential buildings of the cities in Kosovo. This proposed case, apart from energy generation, alternatively would contribute to cutting CO<sub>2</sub> emissions from power generation that in Kosovo is mainly from lignite burning power plants, or private residential heating, which contributes with emissions of other environmentally hazardous gases and particulate matter especially during winter season. Obtained meteorological data for Kosovo provide that in one calendar year there are averagely 278 sunny days with 2000 sunny hours. This model case is based on the installation of 50 m<sup>2</sup> of PV in household’s buildings, roofs and fasades. This equals to 10 kW of installed capacity. The entire cost of this investment is calculated to be around 7300 Euro. Annual energy generation would be circa 15000 kWh that is double than Kosovo’s average household consumption. The calculated payback period is around 7 years. The annual impact on the reduction of CO<sub>2</sub> emissions will be 15 kt/yr only from one residential house. Despite the increase of the cost of house construction, or installation on the just built ones, the PV installation also affects the design of residential houses, but within all 17 SDG the implementation of this model would be a justifiable compromise for future sustainable cities as places for a better living.

**Keywords:** Sustainable city, solar energy, carbon free residence, Kosovo

# Micro-mobility as a source of new conflicts in public spaces in cities

Vladimíra Šilhánková<sup>1</sup>, Martin Maštálka<sup>1</sup>

<sup>1</sup> Department of Public Administration and Regional Studies, Masaryk Institute of Advanced Studies, Czech Technical University in Prague, Czech Republic

[vladimira.silhankova@cvut.cz](mailto:vladimira.silhankova@cvut.cz)

[martin.mastalka@fsv.cvut.cz](mailto:martin.mastalka@fsv.cvut.cz)

**Abstract** Public spaces are an important part of urban life. They create space for the daily movement of residents, form their habits, as well as create the impression that its visitors take away from the city. The urban structure of cities is relatively stable over time, and its transformation bears either large economic costs if we are trying to improve it, or social costs, in the event of bankruptcy. However, new, and often completely different requirements are imposed on public spaces over time, which can also change relatively quickly or even contradict each other. One of the current requirements is to adapt public spaces to pedestrians and increase their residential function mainly at the expense of car traffic; on the other hand, it is to support micro-mobility, not only pedestrians, but especially cyclists, scooter users, electric scooters, and other similar means of transport. Unfortunately, most cities are not ready for these new types of micro-mobility, that is, there is no comprehensive and sufficiently capacitive network of (cycling)paths for these new types of micro-mobility, so most micro-mobility is shifting to sidewalks and other pedestrian routes. This creates new conflicts and new dangers. The aim of the paper is to map new trends in micro-mobility and their conflicts with existing or newly supported use of public spaces and to show possible how to approach this issue in the future.

**Keywords:** public spaces, micro-mobility, new trends in mobility, cities

# The Re-destination of the abandoned buildings; First Albanian School in Pristina

Adonesa Rama 1, Bekim Çeko<sup>1</sup>

1 University for Business and Technology - UBT, Prishtinë, Republic of Kosovo  
bekim.ceko@ubt-uni.net, [ar37477@ubt-uni.net](mailto:ar37477@ubt-uni.net)

**Abstract.** Architecture as determinant of heritage in particularly built heritage, inherits the social, political, economic, technical etc., values as outcomes from the inherited buildings. The focus of the study is mainly the old buildings built in different periods of time that show the antiquity, culture, spiritual and material values of that place. There are many such buildings in our country, which require protection and care, instead of destruction and degradation, which unfortunately is happening. The purpose of this paper is the analysis of old buildings in the Historical Zone in the city of Pristina, in a certain methodology, Taking account on the building of the first Albanian School in Pristina for treatment. Based on the results obtained from the analysis, interviews, questionnaires, comparison and evaluation, the paper aims to give a concept proposal for the intervention and approach to these historical buildings through contemporary architecture in their re-destination. Thus, adopting those old buildings for new needs and showing the coexistence of new architecture with the old one

**Keywords:** Adaptive Reuse, conservation, vernacular architecture.

# **The impact of renovation measures for greater efficiency on public buildings - Case Study "Students Center Campus Administration Building, Prishtinë"**

MSc. Alban Rexhepi <sup>[1]</sup>, Dr.Sc. Petrit Ahmeti <sup>[1]</sup>

<sup>1</sup> University for Business and Technology, Kalabria Neighborhood, 10000 Prishtinë,  
Republic of Kosovo.

ar31702@ubt-uni.net, petrit.ahmeti@ubt-uni.net

**Abstract.** Energy and its use represent vital aspects of modern society. More efficient use of resources directly affects the reduction of the impact that human activity has on ecosystems. Most of the energy in the Republic of Kosovo is used for heating, household, lighting etc. To reduce costs and thermal losses in public buildings, the Government of the Republic of Kosovo and the World Bank have undertaken several projects to improve the energy efficiency of these buildings. The purpose of this paper is to analyze such projects and the results through qualitative and quantitative methods, coming out with conclusions and further recommendations in improving energy efficiency. The results of the already implemented project will be compared with international standards on energy consumption, local technical regulations as well as EU regional ones. In addition to the comparisons above the return on investment of such a project is also analyzed to determine its feasibility. The literature used consists of official MED documents, local and regional technical regulations in addition of EU standards.

**Keywords :** Building, energy, energetic performance, public building, intervention, assesment, proposal.

# Museums – the narrative and dialogue in between the new design and adaptive reuse – the case of KLA Museum and Memorial Compound in Dukagjin, Kosovo

Banush Shyqeriu<sup>1</sup>, Driton Lleshi<sup>2</sup>

<sup>1</sup> Professor at Faculty of Architecture and Spatial Planning, UBT College in Prishtina,  
[banush.shyqeriu@ubt-uni.net](mailto:banush.shyqeriu@ubt-uni.net)

<sup>2</sup> Teaching staff at Faculty of Architecture and Spatial Planning, UBT College in  
Prishtina

[driton.lleshi@ubt-uni.net](mailto:driton.lleshi@ubt-uni.net)

**Abstract.** Architecture sets the stage for the events to unfold and for the latent meanings to be preserved and conveyed. Commemorating war events, such as loss and victories, through the preserved remnants of place and built structures as collective memory' clues and mnemonic encoders, seems to be rather more challenging than building new structures like memorials and museums in post-war Kosovo. This paper examines the hybrid approach and methodology of palimpsest, by fusing the new with the existing historical traces. By using the case of the KLA Museum and Memorial Compound in Dukagjin, through conservation, restoration, retrofitting, interpolation, and adaptive reuse on one side and the new structures on the other side, this paper reveals the narrative and the dialogue of reuse as added value in preserving the genius loci, by creating an open museum as a new poetic stage for reconciliating the past with the future.

**Keywords:** commemoration, war, mnemonic, adaptive reuse, palimpsest

# To assess or not to assess – in-between systematics and mess in the Architecture Design Studio – challenges and new paradigms of education in transitional and developing countries, the case of Kosovo

Banush Shyqeriu<sup>1</sup>

<sup>1</sup> Professor at Faculty of Architecture and Spatial Planning, UBT College in Prishtina,  
[banush.shyqeriu@ubt-uni.net](mailto:banush.shyqeriu@ubt-uni.net)

**Abstract.** Design Studio has been set and still remains the main ‘grinder’ and mindset of education in Architecture, even after more than three hundred years of Académie / École des Beaux-Arts and hundred years from the foundation of the Bauhaus. Yet, new challenges and paradigms brought by technological, economical, ecological and even political shifts, require a refreshing view and a new pedagogical framework of Design Studio as the core of architectural teaching, learning, making and breaking. Using case studies of our own Design Studio in the Architectural School at UBT, this paper investigates the role, importance and relevance of assessing student’s work as processes and products of design in relation to systematics and flexibility within it, in order to nourish and foster strong and secure steps for the future profession in the ever-challenging globalized world. Creating messy, creative environments and mindsets with extensive research-based process for innovation and in the other hand assessing every step of the processes through soft-control and even micro-management, can be very helpful as a constant feedback tool in the non-linear design process, but also stressful for (some of) the students. Using quantitative and qualitative tools and methods, this paper also aims to unveil some of the connections of the role of the systematic assessment and micro-management in education with the performance of the newly graduated students and alumni in the profession of architecture.

**Keywords:** Design Studio, assessment, processes, systematics, micro-management



# Challenging the design and construction cultures in post-war Kosovo – prefabrication in-between tectonics, flexibility and affordability paradigms

Banush Shyqeriu<sup>1</sup>, Labinot Morina<sup>2</sup>, Sherif Budakova<sup>3</sup>

<sup>1</sup> Professor at Faculty of Architecture and Spatial Planning, UBT College in Prishtina, [banush.shyqeriu@ubt-uni.net](mailto:banush.shyqeriu@ubt-uni.net)

<sup>2</sup> MSc. from the Faculty of Architecture and Spatial Planning, UBT College in Prishtina

<sup>3</sup> Civil Engineer at SMARTproject in Prishtina

**Abstract.** The urge for affordable housing is increasing worldwide. Kosovo just recently is developing policies for dealing with affordable housing as opposed to social housing, which notions are still confused with one another. Yet, as municipal and governmental subsidiary programs will provide a financial framework for affordability, architects and engineers have to challenge the current design and construction cultures in order to decrease the design and construction cost and provide not just shelter but values through flexibility for future use and sustainable design and development for families, communities, and the planet. Through the case studies of implementing pre-fab modular design and construction systems, this paper explores and reveals the affordability and flexibility potentials of these systems as opposed to the current design and construction cultures. By using CLT and GLT in hybrid construction systems, the new tectonics reveals the integration of the '3 E's' of sustainable design; ecology, economy, and equity as the urging paradigms for making architecture not just ecologically and economically sound for a group of people but for the whole population through equity.

**Keywords:** housing, affordable, flexibility, pre-fab, modular construction

# Industrial Heritage and Collective Memory in post-war Kosovo – the potentials of adaptive reuse through the case of Kishnica mine

Banush Shyqeriu<sup>1</sup>, Artinë Arifi<sup>2</sup>

<sup>1</sup> Professor at Faculty of Architecture and Spatial Planning, UBT College in Prishtina, [banush.shyqeriu@ubt-uni.net](mailto:banush.shyqeriu@ubt-uni.net)

<sup>2</sup> B.Sc. from the Faculty of Architecture and Spatial Planning, UBT College in Prishtina

**Abstract.** The impact of industrialization was fundamental on reshaping the world, yet de-industrialization is a process which still continues in the developing and transitional countries, and its effect might be even more drastic in terms of vanishing or preserving and regenerating the buildings and industrial sites for their potential as physical and psychological assets. With the lack of policies on industrial heritage and the rapid privatizing of state-owned assets, Kosovo has lost most of the opportunities to rescue, preserve, regenerate, retrofit and adapt these assets for future use within the new planning and development. Using the case study of the proposal for adaptive reuse of Kishnica Mine, this paper presents both the importance of expounding and fostering the problem in the education of the young architects and providing the methods, opportunities, and potentials of rescuing and redeveloping industrial buildings and sites, as both an institutional and professional liability and opportunity for blending the new into the old as assets for sustaining the economic development and collective memory of socio-cultural landscapes.

**Keywords:** industrial heritage, Kishnica mine, policies, adaptive reuse, collective memory

# Home-office: the ongoing and future paradigms for hybrid and flexible live-work spaces

Banush Shyqeriu<sup>1</sup>, Floriana Zllanoga<sup>2</sup>

<sup>1</sup> Professor at Faculty of Architecture and Spatial Planning, UBT College in Prishtina, [banush.shyqeriu@ubt-uni.net](mailto:banush.shyqeriu@ubt-uni.net)

<sup>2</sup> can. MA at Dessau International Architecture Graduate School (DIA)

**Abstract.** Remote work or working at home and from home has become an entrenched practice in the last two years, changing our habits so much that some people do not want to return to offices. Yet, working from home has challenged the way our homes and apartments are designed to allow adequate flexibility in order to maintain the balance as both living and working environments. Working from home disconnects you physically from your colleagues or daily collaborators, maybe making you feel unnecessary and uncreative. The debate and discourse this paper tend to contribute is identifying what challenges faced working from home and even studying from home in our daily home environments, and exploring the best modalities for working remotely and telework in the format of hybrid and flexible arrangements, *I* and *We* work, which will require to re-imagine both home and office in terms of space planning. By exploring historical precedents and paradigms, the digital cultures and environments, as well as extensive feedback from more than two years of the covid-19 pandemics in Kosovo, this paper will be finally focused on providing concrete guidelines and examples of how our homes and retreats can be hybridized as home-offices, and how apartments can be designed to be both affordable and flexible as future-oriented environments for a better quality of life.

**Keywords:** remote work, home-office, space planning, hybrid, flexible

# Green spaces in Pristina and their relation with air quality

Bardha Meta1

1 Bardha Meta, Msc, Architect & Teaching Assistant at UBT College,  
82 Prishtinë, Kosovo

bardha.meta@ubt-uni.net

**Abstract.** In 2019, according to IQAir, Prishtina was ranked as the third capital city in Europe with the highest air pollution. From this ranking, many questions arise about the factors that cause air pollution in the crossroads, and the possible solutions to this problem. Looking at the problem from an urbanism point of view, one of the solutions could be the addition of green spaces in the capital. According to the WHO standard, the minimum space needed for greenery is 9m<sup>2</sup> per person. The study aims to identify the green spaces of Pristina and compare them with the necessary spaces based on the number of inhabitants. In addition to the current green spaces, the aim is to identify abandoned lots that can be transformed and re-planted tall greenery, creating a sustainable ecological corridor, within a wider urban strategy. Other aspects that have been considered are public open spaces, and their distance from residents based on neighborhoods, according to the idea of the 15-minute city.

**Keywords:** Prishtina, Air Pollution, Green Areas, Public Spaces

# Analysis and Comparance of Wall to Window Ratio of Residential Buildings Based on Period of Construction in Kosovo

MSc. Besa Haziri <sup>[1]</sup>, Dr.Sc. Petrit Ahmeti <sup>[1]</sup>

<sup>1</sup> University for Business and Technology, Kalabria Neighborhood, 10000 Prishtinë,  
Republic of Kosovo.

bbesahaziri@gmail.com, petrit.ahmeti@ubt-uni.net

**Abstract** One of the forms of sustainable construction is to increase energy efficiency in residential buildings. Improving energy efficiency in buildings leads to reduced energy consumption, which in turn contributes to reducing greenhouse gas emissions. The purpose of this paper is the research and analysis of residential buildings in Kosovo in terms of energy efficiency, avoidance and recovery of unnecessary thermal losses. The reason for selecting this building typology lies in the fact that in Kosovo over 40% of energy is used for households and this typology constitutes the largest percentage of energy losses, which is constantly increasing. Considering from previous studies, among the main factors for energy loss of buildings is the wall-window ratio, so the aim of this paper is to find an adequate wall-window ratio, in order to increase the efficiency in buildings and increasing the level of comfort. For this reason, residential buildings were taken for study in different time periods, including the years '50 - '99 and 2000-2011. Each building will be analyzed on the basis of calculations and in the end we will come to a result regarding such a report.

**Keywords** : Building, wall-window ration, energy efficiency, residential buildings

# Resilience and regenerative design strategies on the urban design scale

Besa Jagxhiu<sup>1</sup>, Ferhat Bejtullahu<sup>1</sup>

<sup>1</sup>UBT College, Kalabria nn., 10000 Prishtina, Kosova [besa.jagxhiu@ubt-uni.net](mailto:besa.jagxhiu@ubt-uni.net),  
[ferhat.bejtullahu@ubt-uni.net](mailto:ferhat.bejtullahu@ubt-uni.net)

**Abstract.** Urban environmental degradation and disasters are leading to the application of regenerative and resilient concepts at the urban design scale. Urban design is about the arrangement, appearance, and function of our neighborhoods and cities that can significantly affect a place's environmental, socio-economic, and cultural outcomes. The current approach to resilience has not been very proactive, without clear long-term strategies for change. Regenerative design reaches further and aims beyond net zero results. It derives from context, creating a need to understand wider environmental, socio-economic, and cultural requirements. Regenerative urban design compared to resilience reinforces the capacity for self-healing; attempting to give back what engineering growth has taken from nature. This paper aims to identify strategies for greater resilience and regenerative design at the urban design scale. In particular, the concept of resilience is explored in sustainability and regenerative urban design. The paper concludes with new urban design principles that should be applied in everyday life to support the creation of resilient and regenerative solutions for the built environment.

**Keywords:** Resilience, regenerative design, urban design, sustainability.

# EXPERIMENTAL INVESTIGATION of CONCRETE BEAMS REINFORCED WITH HYBRID BFRP/STEEL BARS

Besian Sinani<sup>1</sup> Edvin Thana<sup>2</sup>

UBT College, Faculty of Architecture, 10000, Pristina, Kosovo,

besian.sinani@ubt-uni.net <sup>1</sup>

Niğde Ömer Halisdemir University, Faculty of Engineering, Nigde, Turkiye,

edvinthana@gmail.com <sup>2</sup>

**Abstract** An experimental investigation of the hybrid reinforcement application on concrete beams, which are reinforced with Basalt FRP (Fiber Reinforced Polymer) and steel bars as longitudinal reinforcement, is presented in this study. By using the centric loading method, the behavior of produced hybrid reinforced concrete beams with GFRP/steel bars was observed and analyzed. All tested models were created with rectangular cross section with the width of 200mm and the depth of 300mm. The beams are simple supported and have a span of 2800mm. The main objective of this research is to investigate and to analyze the flexural behavior of concrete beams reinforced with BFRP bars. Also, the parameters as the type of material, the amount and the configuration of the rebars as longitudinal reinforcement were investigated as well. **Keywords:** Experimental approach, Simple supported beams, Hybrid Reinforcement, BFRP Bars, Ductility, Flexural behavior.

# Territory Planning; Traffic Network, Settlement Polycentrism and Areas with Development Potential (Prizren Municipality)

Binak Beqaj

Faculty of Architecture and Spatial Planning, UBT College, high Education Institution,  
Prishtina, Kosova

[bbeqaj@ubt-uni.net](mailto:bbeqaj@ubt-uni.net)

**Abstract.** In recent years, the position regarding spatial planning is considered with approach with progressives because it is based on cohesion, co-participation and oriented in development projects, therefore, predicting the certain character of a territory through key factors as well as the most effective design and implementation process! The main factors of the process are considered:

- Traffic network,
- Polycentrism of settlements and
- Areas with developmental potential.

Through this paper, these determinant factors will be addressed in the development process, based on analyses of the existing situation, community interest about the development concept and new proposals, so, that through an integrated approach to ensure the comprehensive framework of development within the territory as well as the interconnection of the territory with its surroundings, based on real potentials.

**Key words:** territory, planning, factors, frameworks, sustainability, co-participation, interconnection, development.



# Fostering the demand for skilled labor force in Construction 4.0 era

Blerita Vula Rizvanolli<sup>1</sup>, Gent Hasimja<sup>2</sup>

1 Faculty of Architecture and Spatial Planning, UBT College, Kalabria, n.n., 10000  
Prishtina, Kosovo

[blerita.vula@ubt-uni.net](mailto:blerita.vula@ubt-uni.net)

2 Faculty of Architecture and Spatial Planning, UBT College, Kalabria, n.n., 10000  
Prishtina, Kosovo

[gent.hasimja@ubt-uni.net](mailto:gent.hasimja@ubt-uni.net)

**Abstract.** “Skilled-labor shortages” are the headline of every professional discussion not only in Kosovo, but in regional and European Countries as well. And construction industry doesn’t fall behind. Each country addresses this issue differently by using strategies that fit their overall development objectives. The average age of the employees in the construction sector is increasing faster and about 50% of them are going to be retired until 2030. There are several reasons why the young generations don’t pursue this industry as their career opportunity: Poor industry image; Company’s culture and safety working environment; Migration of skilled force; Seasonal working system; Lack of professional advancement and Labour Mismatch. This study aims to analyse the consequences of skilled-labour shortages in construction sector in Europe and Developing Countries understanding the objective of the industry to be upgraded to Construction 4.0, and introduce recommendations on how to shift the perception of it into an attractive sector for young skilled-labour force.

**Keywords:** construction, skilled-labor force, employees, professionals

# Social Housing in Pristina

Msc. Dritëro Çadraku, Dr. Lulzim Beqiri<sup>2</sup>,

1 College UBT- [cadrakudritero@gmail.com](mailto:cadrakudritero@gmail.com)

2 College UBT- [lbeqiri@ubt-uni.net](mailto:lbeqiri@ubt-uni.net)

**Abstract:** A significant number of families and individuals, including the elderly and young, families with many children, etc., who, although with their work contribute or have contributed to the country's economy, are not able to afford the purchase of housing on the market. The purpose of this paper is to analyze the urban aspect, policies, and social programs for creating the most appropriate conditions in the social housing sector for individuals who cannot afford a suitable living. For this reason, an attempt will be made to understand, through analysis and research, what are the urban factors, such as morphological, functional dimensions, financial mechanisms, as well as the proposal and incorporation of urban-architectural forms of housing, thus creating a neighborhood which will it met all the necessary needs for its residents with the aim of sustainable growth and development in the framework of social housing as well as the avoidance of urban and social segregation. Paper also aims to study the cases of social housing in countries that have more advanced social policies and based on these examples to create a suitable model for our country. The project mostly focus in creating a social neighborhood that contain green spaces, cultural spaces, sports activities, spaces for children, urban farming, etc. in order that people of different categories to live together and learn from each other's experiences.

**Keywords:** social housing, urban aspect, public spaces, sustainable architecture, urban and social segregation.

# Deficiencies in urban planning and urban design in Kosovo during 2000 – 2020

Egzon Bajraktari

UBT, Rexhep Krasniqi str., 10000 Prishtinë, Kosovë

[egzon.bajraktari@ubt-uni.net](mailto:egzon.bajraktari@ubt-uni.net)

**Abstract.** Urban development in recent years in Kosovo was challenged with many problems. Migration toward cities was high and so the construction and infrastructure developments of all kinds. Kosovo cities were experiencing major transformation during years 2000-2020. Planning authorities seemed unprepared and had difficulties in managing this situation, not to mention the socio-political transition in which the country was going through. Many described this situation as chaos. On one hand there was a lack of resources and somewhat outdated practices which were not able to deliver appropriate urban planning and urban design measures for the dynamic transformation of Kosovo cities in these years. On the other hand some of the applied planning measures seem to have been misaligned with the development trends in the country in general, which is clearly visible after examining this two decades period. By illustrating some of these problems with case study examples, this paper outlines some of the key deficiencies in urban planning and urban design practices in Kosovo observed in years 2000-2020.

**Keywords:** Urban planning, urban design, Kosovo, years 2000-2020.

# Verticalisation/densification of Prishtina

## Pro at contra arguments

Elvida Pallaska

<sup>1</sup> Faculty of Architecture and Spatial Planning, UBT College – Higher Education  
Institution,  
Prishtina, Kosovo  
[elvida.pallaska@ubt-uni.net](mailto:elvida.pallaska@ubt-uni.net)

**Abstract.** This paper attempts to evaluate and evidence the push for densification/verticalization in Prishtina, if it has legal support and in its plans as strategic documents, as well as to analyze the driving factors or side effects, resulting from the phenomenon of densification/verticalization in Prishtina. Methodology: i) Analysis of legality and planning documentation in support of densification-verticalization in Kosovo/Prishtina; ii) Evaluation of macro and micro driving factors in urban densification of Prishtina; iii) Evaluation of the effects of "densification/verticalization" in Prishtina. Conclusion: Prishtina's developments in the sense of densification within the Urban Center are not supported by the Strategy or Spatial Plan of Kosovo, just as not by the Spatial Planning Law, where Urban Regeneration, criteria and purpose should be specified. major, consequences and effects. Prishtina has sporadic and spontaneous constructions, formal and with permission, without comprehensive controls, without inspection and without any major purpose for the good of the city or citizens.

**Key words:** Densification, Verticalisation, Spatial Planning Legislation, Municipal Development plan f Prishtina, Cultural Heritage, Urban Identity

# Principles and interaction between biophilic architecture and regenerative lifestyle for better life quality and regenerative environment

Ferhat Bejtullahu<sup>1</sup>, Besa Jagxhiu<sup>1</sup>

<sup>1</sup>UBT College, Kalabria nn., 10000 Prishtina, Kosova

[ferhat.bejtullahu@ubt-uni.net](mailto:ferhat.bejtullahu@ubt-uni.net), [besa.jagxhiu@ubt-uni.net](mailto:besa.jagxhiu@ubt-uni.net)

**Abstract.** Biophilic architecture and regenerative lifestyle are discussed in many aspects, especially in response to growing spiritual and environmental challenges and opportunities of these two concepts to solve challenges. This paper stresses the gap in discussions of biophilic architecture's impact on building occupants' life quality and interaction with regenerative lifestyle as the main topic of the research. This qualitative research conducts a literature review to discuss the interaction of biophilic architecture with regenerative lifestyle as a theoretical framework for analyzing their interaction and possibilities to achieve better life quality. Analysis and comparison methods are used to answer research questions: Can our inner transformations in how we think, how we work, and who we are impact interaction with biophilic architecture and give us a more appropriate answer to the environmental issues that we face? In which way can principles of biophilic architecture and regenerative lifestyle contribute to the building occupants' quality of life? The results show that interaction between biophilic architecture and regenerative lifestyle is a solution and can help mitigate the degenerative impact of CO<sup>2</sup> emissions and improve life quality. Furthermore, knowledge gaps are identified to encourage future research and critical reflections on biophilic architecture as a practice and regenerative lifestyle.

**Keywords:** Biophilic architecture, interaction, regenerative lifestyle, life quality

# The challenges of designing a gallery on a library basis

Msc. Klodina Krasniqi Berisha<sup>1</sup>, Dr. Lulzim Beqiri<sup>2</sup>,

1 College UBT- [kk40906@ubt-uni.net](mailto:kk40906@ubt-uni.net)

2 College UBT- [lbeqiri@ubt-uni.net](mailto:lbeqiri@ubt-uni.net)

**Abstract.** The primary purpose of this paper is to highlight the challenges of restructuring the old building that has served the library of the city of Gjilan, which to this day has been successfully transformed into an Art Gallery. Transformable architecture today has provided ideal opportunities for the design and well-functioning of buildings, which have served time in one period, and in another stage have been "neglected". Resistance of materials and their service are some of the potentials that have helped finalize this project. How much they are compatible with each other, how much they have complemented each other's function, and what are their biggest differences corresponding to the elaboration of this topic. A building can best reflect the culture of a country, or carry within itself the past of a people. Only by engaging in this spirit will the raising of civic, professional and intellectual awareness of architecture take place. In this way the right architecture will leave no space for architecture with selfish bases and will raise hope for modern architecture acceptable all over the world.

**Keywords:** restructuring, library, gallery, material, architecture, project.

# Housing quality in the city of Berati: an analytical approach of Typology and construction

Kujtim Elezi<sup>1</sup>, Nuran Saliu<sup>2</sup>

<sup>1</sup> UBT, Prishtina, Kosova, [kujtim.elezi@ubt-uni.net](mailto:kujtim.elezi@ubt-uni.net)

<sup>1</sup> UT, Tetova, Republic of North Macedonia, [nuran.saliu@unite.edu.mk](mailto:nuran.saliu@unite.edu.mk)

**Abstract.** The city of Berati has a long urban history rooted deep down in ancient times. Different factors indicated the formation and the development of the city itself during his existence. Berati it is well known as a city which begins as a city of fortification and churches, but as the time goes by, the city in his architectural layers had saved with jealousy layered a fortune of the domestic architecture. Being part of the Ottoman Empire for almost five centuries, it is obviously that traces of the previous eras will be 'covered' with the Ottoman presence, evident especially in the vernacular architecture. This article offers an insight into Ottoman era patterns appearing in the town of Berati as a marvelous example of the Ottoman era vernacular house in the Balkans.

**Keywords:** Berati's Ottoman era houses, typologies, building materials, vernacular architecture

# Benefits of digitalization of Construction permit process case study Prishtina Municipality

Lulzim Beqiri<sup>1</sup>, Zejnulla Rexhepi<sup>1</sup>,

<sup>1</sup> UBT College; Prishtina; Kosovo

[lbeqiri@ubt-uni.net](mailto:lbeqiri@ubt-uni.net); [zejnulla.rexhepi@ubt-uni.net](mailto:zejnulla.rexhepi@ubt-uni.net) ,

**Abstract.** Digitalization as global approach is a process that integrate and connect information by transforming from physical to digital format. This paper aim to bring benefits of digitalization of entire process for construction permit procedures, explore methods of shaping, and redesign the process from application to final product (permit). Paper presents process of digitalization at municipality of Prishtina as pilot project and possibilities for application at other municipalities Kosovo wide that will make municipality more efficient.

**Keywords:** Digitalization, Application process, Construction permit, efficiency



# The influence of the geometric shape of the base of the object on heat losses

Marigona Krasniqi

UBT – Higher Education Institution, Lagjja Kalabria, 10000 Pristina, Kosovo

marigona.krasniqi@ubt-uni.net

**Abstract.** Through the analysis of heat losses in objects, in addition to the calculations of thermal losses, we must also consider the geometric shape of their base, ensuring the designed thermal and physical parameters of the environment. In general, buildings are built with a square, rectangular, combined and sometimes circular base. These basic geometric shapes are selected depending on demand, possibility and need. In addition to the goal that heat losses to be as small as possible, the selection of the shape of the base of the object should also ensure comfort for people. Interweaving the goal of reducing thermal losses, and thus the cost with comfort, we might generate new ideas in architectural design. In this work, there will be analyzed heat losses for different geometric shapes of the base of the object with equal surfaces and with the same orientation.

**Keywords:** object, heat losses, geometric form

# Application of the Structural Insulated Panels. Case study Kosovo

Dr.Sc. Petrit Ahmeti <sup>[1]</sup>, Elma Ndreca<sup>[2]</sup>

<sup>1</sup> University for Business and Technology, Kalabria Neighborhood, 10000 Prishtinë,  
Republic of Kosovo.

<sup>2</sup> Polytechnic University of Tirana,  
petrit.ahmeti@ubt-uni.net, elmandreca@gmail.com

**Abstract** Conventional concrete building construction are one of the main contributors on carbon footprint in building sector globally which in many countries is being replaced with light timber prefabricated constructions. Prefabricated building construction is being considered one of the responds towards decrement of carbon footprint from construction sector. Structural Insulated Panel construction belongs to one of the main types of prefabricated timber constructions with integrated thermal insulation, which is changing the way of building construction in many terms by offering a high living commodity with a very low environmental effects. What are the advantages and challenges of Structural Insulated Panel system implementation in Kosovo construction sector? This paper focuses on a case study which offers sufficient analysis and information on advantages and weaknesses of these type of buildings and challenges including the context of Kosovo as a new market for Structural Insulated Panel.

**Key words:** Structural Insulated Panel, Sustainability, Energy Efficiency, Prefabricated structures

# Housing policies and community development in Kosovo

Ramë Hamzaj

<sup>1</sup> UBT-University College for Business and Technology, KOSOVO

rame.hamzaj@ubt-uni.net ;

**Abstract.** The paper will focus on the impact housing has on the quality of life for different categories of society in the territory of the Republic of Kosovo, including urban and rural areas. The history of housing development will be examined in the context of the development of family economies and communities, as well as the impact that housing has in terms of sustainable and affordable social development for all communities living in Kosovo. It will elaborate and examine the components of social, adequate and affordable housing for the development of communities, based on the past, present and with suggestions for the future of housing development. It will analyze programs related to housing development policy choices, to bring positive changes to the social, sustainable and affordable housing sector, respecting all international conventions on human rights and the International Urban Agenda. It will explore the data with detailed information on norms, standards and rules for the development of sustainable policies for housing, to continue further in realizing the rights to housing and development of communities. The role and responsibilities of Local Institutions, Central Institutions, NGOs and Educational Institutions in the development of the social, sustainable and affordable housing sector in Kosovo. The main suggestion will be the best methods for planning, drafting, developing and monitoring the strategy for the development of sustainable, resilient housing in settlements and community awareness in Kosovo, taking as a basis all the practices of the countries of the Region, in Europe and International. The abstract should summarize the content of the paper in short terms, i.e. 150-250 words.

**Keywords:** Social Housing, adequate and affordable development of communities, Local Institutions, Central Institutions, NGOs and Educational Institutions.

# Policies and strategies for achieving sustainable development of a compact city: Questioning the potential of Prishtina to become a Compact City

Rineta Jashari<sup>1</sup>Blend Lleshi<sup>2</sup>

University for Business and Technology-UBT; Pristina, Republic of Kosovo

University of Pécs, - Pécs, Hungary

[rineta.jashari@ubt-uni.net](mailto:rineta.jashari@ubt-uni.net); [blendilleshi1@gmail.com](mailto:blendilleshi1@gmail.com)

**Abstract.** When trying to define urbanization, we cannot just take into account the definition of the changing land areas; but we ought to take into account the influencing factors such as the development of economic, social, cultural, and of course environmental aspects of a city. In this regard, when trying to take this multidimensional and complex aspect into account, we come to think of the compact city requisition, as a form of sustainable growth. The compact city most often concentrate on vertical development and urban density rather than urban sprawl and more land area use, to achieve efficient use of land and beneficial utility of natural resources, easing also mobility and transportation within a city. Surely, within SDG goals, the compact city has many supporters who acknowledge its advantages and advocate its complementary approach to the land and nature, as a way to achieve more sustainability within city development. There are, however, downsides, these vertical dense spaces highly influence the green areas and impairment of mental health due to overcrowding. As in many developing countries, land use in Kosovo has changed drastically in the last decades. Rapid, urban growth has caused both environmental and socio-economic damage, especially in Prishtina. The paper aims to reflect urban demographic trends, physical expansion, and urban challenges to have a clearer picture of trends of urbanization in Prishtina and challenges facing the city today, by defining so the challenges that need to be addressed for these cities to develop into a compact form. It will also analyse the planning documents of Pristina in order to elaborate the city's prospect vision in context of compact development. Thus descriptive and deductive methods will be used in this research, while certain data reflecting certain analysis will also take place.

# Hybrid and modular residential complexes design

Sadije Deliu<sup>1</sup>, Florian Miftari<sup>2</sup> and Gresa Koxha<sup>3</sup>

<sup>1</sup> Faculty of Architecture and Spatial Planning, UBT College, Lagjja Kalabria, 10000  
Pristina, Kosovo, sadije.deliu@ubt-uni.net

<sup>2</sup> Faculty of Architecture and Spatial Planning, UBT College, Lagjja Kalabria, 10000  
Pristina, Kosovo, fm33366@ubt-uni.net

Faculty of Architecture and Spatial Planning, UBT College, Lagjja Kalabria, 10000  
Pristina, Kosovo, gk34438@ubt-uni.net

**Abstract.** Architects develop solutions through inspiration and information – human, social, natural, economic and technological. The architect is tasked with envisioning a new reality that addresses clear and unspoken needs, to create a set of solutions that fit this vision. The way of living and residing is undergoing different changes in the world and Kosovo is not an exception. The hybrid complex design addresses the socialization of three generations. Hybrid buildings are designed to produce a mix between public and private activities that take place within them. The hybrid scheme proposes environments where different types of activities mix together, improving habitat conditions and revitalizing the surrounding areas. This approach is tested through a case-study in an area in the city of Ferizaj, Kosovo. Greater focus in this design has been given to the elderly because it is the most sensitive category and has special needs. There is a nursing home in Ferizaj, but it does not meet the elderly requirements. The traditional aspect of the Albanian people lets us understand that there will always be coexistence of different generations in the family, but recently this tradition has started fading. With this project, a solution has been given on how the life of the elderly can be developed and their integration into society by creating common spaces for their socialization with different generations, where a part of the Hybrid Complex has been allocated for collective housing. Additionally, this project will demonstrate how these will be connected to each other trying to create a common identity and physical character of the built structures. This is proposed to be achieved through modular design- prefab containers, that will tackle also the issue of lifecycle of buildings, having in mind the circular economy trends and the need for temporality and flexibility in construction.

**Keywords:** hybrid complex, modular design, co-living, collective housing

# Impact of privately opened public spaces on housing sustainability

Safete Veliu Rexhepi<sup>1</sup> and Zejnulla Rexhepi<sup>1</sup>

<sup>1</sup>Higher Education Institution UBT, Faculty of Architecture and Spatial  
Planning, Lagjja Kalabria pn; 1000; Pristina; Republic of Kosovo

<sup>1</sup>Higher Education Institution UBT, Faculty of Architecture and Spatial  
Planning, Lagjja Kalabria pn; 1000; Pristina; Republic of Kosovo

[safete.veliu@ubt-uni.net](mailto:safete.veliu@ubt-uni.net)

[zejnulla.rexhepi@ubt-uni.net](mailto:zejnulla.rexhepi@ubt-uni.net)

**Abstract.** Sustainability on housing neighborhoods it is a broad topic, which can be treated in various ways. Public spaces in the housing neighborhoods have an important impact in enhancing the quality of life. There are different methods to create public spaces in the world. This research studies public spaces built in private property and their impact on quality of life. Aim of the study it is to analyze the privately opened public spaces and the possibility of creating these spaces within housing neighborhoods, in order to increase sustainability. The study is based on concrete examples and case study it is the city of Pristina.

**Keywords:** Housing in Pristina, housing sustainability and public spaces.

# **Fractals: Relation of Nature with Fractal Architecture**

Sanelina Sadiki<sup>1</sup>, Floranda Balaj<sup>2</sup>

1 UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Pristina,  
Kosovo

2 University of Pristina “Hasan Prishtina”, Str. "George Bush", No.31, 10000  
Prishtinë, Kosovo

**Abstract:** A unique approach to the design and development of architectural form, fractal architecture is based on the principles that control the geometry of natural forms. Fractal is identified by some of these principles like rugged, self-similar, developed through repetition, and depending on starting conditions. Fractal is also complex, but it can be described by simple mathematical algorithms with which it can be understood that even beneath rugged objects, there is order. This paper aims to identify the fractal theory of science model of complexity and its relationship with architectural design theories by performing a qualitative analysis and critical approach through architecture and primary human resources.

**Keywords:** Architecture design, complexity, fractals, geometry, nature, mathematic, sustainability

# Provincial residential villa for living and property administration - Vineyard in Peja

Shkurte Dalipi<sup>1</sup>, Ilhan Cucović<sup>2</sup>

UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtina,

Kosovo

[shkurte.dalipi@ubt-uni.net](mailto:shkurte.dalipi@ubt-uni.net)<sup>1</sup>

[ic40905@ubt-uni.net](mailto:ic40905@ubt-uni.net)<sup>2</sup>

**Abstract.** The topic to be considered in this thesis is a provincial villa with residential administration in the city of Peja, Kosovë. The construction of a provincial residential villa with property administration in the city of Peja offers a good living opportunity and good comfort for the families who use it and a new experience for all lovers of different wines that are cultivated in the region of Kosovo. The reason for selecting this topic is the great need for the construction of facilities with this destination, thanks to the characteristics of the Peja region as a special tourist place with agricultural potential with a Mediterranean climate. The design of the villa started with an analysis of the location and the review of the conditions that this villa must meet for the needs of a family of five. The standards that this building must meet were studied and based on these data, a villa for individual living was designed which with the plot it offers is suitable for a wine cellar as there is an existing vineyard with 95 ares (9500m<sup>2</sup>) of category I (first) land for agricultural purposes. With the completion of this work it is expected to design a modern villa and with traditional materials, different from conventional villas and that will really give me a special pleasure during the design.

**Keywords:** Residential villa, Vineyard, Turism, Traditions, tradition and advanced materials.



# **An extensive background of urban unsustainability and searching for alternatives: Compact City, Accessibility, Traditional Neighborhood and other alternative concepts and approaches**

Shqiprim Ahmeti<sup>1</sup>, Lyra Bakija<sup>1</sup>,

<sup>1</sup> UBT- Higher Education Institution, Institute for Urban Studies and Spatial Planning, Pristina, [shqiprim.ahmeti@ubt-uni.net](mailto:shqiprim.ahmeti@ubt-uni.net); [lyra.bakija@ubt-uni.net](mailto:lyra.bakija@ubt-uni.net)

**Abstract.** Starting with the Industrial Revolution and establishing itself throughout XX. Century, especially in developing countries, the phenomenon of excessive and uncontrolled urbanization has brought rapid urban growth in many countries, resulting in urban sprawl and demand for motorized travel with severe environmental, social and economic consequences. Air pollution mainly caused by industrialization and transport, urban power and urban slums, economic and social segregation, social and economic inequality, loss of agriculture land, spatial disbalances particularly those between urban and rural areas, traffic congestions, as well as threat towards unrenowable sources are among biggest concerns urging from the given unsustainable development. The aim of this study is to examine the background of current unsustainability in urban planning and development, to examine the developments that led to the congestion point that our cities have reached, and to reveal the developments of alternatives, approaches and solution proposals that emerged as a result of efforts to find a way out of this situation. This research is part of a larger study with the same aim, with this time focusing only on the following five concepts and approaches: Compact City; Accessibility; Walkability; Traditional Neighborhood and New Urbanism. These concepts and approaches will be detailly elaborated in context of alternatives to unsustainability, thus deductive and descriptive methods will be used. However, certain pictures, maps, figures and tables will be also used to better elaborate certain analyses and concepts.

**Keywords:** Unsustainability Alternatives; Compact City; Accessibility; Walkability; Traditional Neighborhood; New Urbanism.

# **“Property and Inheritance Rights for Women whose husbands disappeared during the last war in Kosovo “- Krusha e Vogël and Krusha e Madhe – Region of Prizren, Kosovo**

Dr. Sc. Venera Goxha

UBT- College of Business and Technology, Lagja Kalabira,

10000 Prishtina, Kosovo

[venera.goxha@ubt-uni.net](mailto:venera.goxha@ubt-uni.net)

**Abstract** Did the women of Krusha e Vogel and Krusha e Madhe inherit the family property, since their husbands were killed, or disappeared and to this day they are still missing? Property and Inheritance Rights for Women whose husbands were killed or disappeared during the last war in Kosovo, is the purpose of this study, respectively the access of these women to family real estate. The case study is women whose husbands were killed or disappeared during the last war in Kosovo and who, on this occasion, earned the title of 'widow'. The research is conducted in the villages of Krusha e Vogël - Municipality of Prizren and Krusha e Madhe - Municipality of Rahovec, one of the most suffered villages from the recent war in Kosovo. Krusha e Vogël, as a result of the recent war, has 113 male victims, or 70% of all men from the age of 13 to the age of 77, leaving widows and orphans. In the village of Krusha e Madhe, 243 Albanians were massacred by Serbs living in the same village, leaving widows and orphaned children, alive. According to these data, most of the Krushian families, as heads of households have surviving wives, widows. Therefore, being the head of the family and facing a mountain of challenges, such as economic, social, and cultural, the issue of how these women have approached the property and family heritage is considered. The research questions consist of: “Are the heads of the families, even after 20 years from the last war, legitimate owners of the family property or, as the tradition defines it, family property is inherited to surviving male heirs”?

**Key words:** Property Rights, heritage, widows

# Basic Principles of Hotel Room Architectural Design

Visar Shllaku1

IUBT University for Business and Technology

Architecture and Spatial Planning

Lagja Kalabria pn

10000 Prishtine, Republika e Kosoves

[visar.shllaku@ubt-uni.net](mailto:visar.shllaku@ubt-uni.net)

**Abstract.** The hotel rooms can be different in terms of their content and capacity. As one of fundamental conditions taken into account are the movement trajectories, together with the furniture and room static components, in interaction forms its organization scheme. Even these components treated independently or on correlation, establish entire model as a whole. Space for communication, furniture, static elements can thus form a flexible functional organogram that can be applied after being carried out as a functional scheme.

**Keywords:** Hotel room, architectural design, function, scheme

# Understanding Development of the Architectural Design Concept as a Process of Metamorphosis

Visar Shllaku<sup>1</sup>

<sup>1</sup> UBT University for Business and Technology

Architecture and Spatial Planning

Lagja Kalabria pn

10000 Prishtine, Republika e Kosoves

[visar.shllaku@ubt-uni.net](mailto:visar.shllaku@ubt-uni.net)

**Abstract.** The architectural concept develops by growing and evolving through a continuous change in its form and features, which we can call metamorphosis with alterations in its composition. The design method that begins with an idea develops as the natural processes of metamorphosis that direct the model along a definite trajectory through various thoughtful and necessary stages for its growth and shaping toward an expected completion. Throughout its journey model gradually accepts per se new features or mature changes that are given to it or even acquired during its transformation. Comparing the development of architectural concepts via natural processes of metamorphosis and morphogenesis helps us better comprehend their treatment and progress path.

**Keywords:** Metamorphosis, concept, form, architectural design

# Functional Scheme of the Bank Building

Visar Shllaku1

1UBT University for Business and Technology

Architecture and Spatial Planning

Lagja Kalabria pn

10000 Prishtine, Republika e Kosoves

[visar.shllaku@ubt-uni.net](mailto:visar.shllaku@ubt-uni.net)

**Abstract.** This paper treats the main bank facilities' spatial organization of bank buildings. The procedure of correlation of its facilities can and should be organized in a suitable pattern predominantly regarding security and generally in the form of organization diagrams. The architecture of the bank is functionally organized mainly in terms of security. Thus, this element has a significant impact on its architecture. By analogy between the realized examples presented in the literature, we can derive the satisfactory arrangement of the spaces following its functional organogram. This scheme in a category of a basic organization chart will serve as a basis for starting the generation of typologies of the bank's facility.

**Keywords:** Bank, architectural design, function, scheme

# Role and evolution of the living room in individual house, Case study Kosovo

Zana Prelvukaj<sup>1</sup>

UBT- Higher Education Institution; Pristina, Republic of Kosovo

[zana.prelvukaj@ubt-uni.net](mailto:zana.prelvukaj@ubt-uni.net)<sup>1</sup>

**Abstract.** The living room is one of the main housing units. Living room considered as a common space for all the residents inside the living spaces. In Kosovo, the living room unit it is considered the central part of the house which weaves daily activities of residents such as family gatherings, watching television programs, reception of guests, games etc. The research aims to study the role and evolution, from the “kulla” to the application of the last buildings in Kosovo. The change of times also plays a big role, the way of life, the number of residents in the house as well as the mentality of the population. During the research, it is notest the change of the surface of the unit, the function and utilization of the space, the connection with other functions of the house, the interior and the lighting in the residential houses in Kosovo.

**Keywords:** Living room, daylight, surface, evolution

# The processes of creating public spaces in the Municipality of Prishtina

Zejnulla Rexhepi1,

1 UBT – Higher Education Institution, Prishtine, Republic of Kosovo

[zejnulla.rexhepi}@ubt-uni.net](mailto:{zejnulla.rexhepi}@ubt-uni.net)

**Abstract.** Nowadays, the creation of public spaces is not only related to public properties, but in many countries/cities it is also being implemented in private properties through the process known globally as "Privately Owned Public Space". The implementation of this process has been started in 1961 in New York, and it is increasingly being implemented. The municipality of Prishtina, as the capital city of the Republic of Kosovo, implements different procedures for the creation of public spaces. This article elaborates on the procedures implemented in the Municipality of Prishtina for the creation of public spaces, and the elaboration of the similarity with the well-known process "Privately Owned Public Space"

**Keywords:** Public Spaces, Private Spaces, Privately Owned Public Spaces, Hybrid Spaces.

# Interior elements of the traditional residential building, called “Kulla”

Zekë Islamaj<sup>1</sup>, Bekim Çeko<sup>1</sup>

<sup>1</sup> University for Business and Technology - UBT, Prishtinë, Republic of Kosova

[zeke.islamaj@ubt-uni.net](mailto:zeke.islamaj@ubt-uni.net); [bekim.ceko@ubt-uni.net](mailto:bekim.ceko@ubt-uni.net)

**Abstract.** The way life is organized and how life functions are developed is, in fact, a direct reflection of how the architectural projects of buildings are developed, which are dedicated to the users (those who will use them). Living, as a basic life activity, in any residential building, not even in traditional residential buildings "towers", cannot be imagined without interior elements. The interior elements, apart from the functional aspect, are also characterized by the: decorative, social, psychological, emotional aspect, etc. Dealing with traditional residential buildings, means understanding the built circumstances in general and in particular understanding the material and construction techniques of formation within popular architecture. The focus of the study is mainly the interior elements of rural buildings for traditional housing, called "Kulla", which are located in the western part of Kosovo (usually found in the western part of Kosovo), respectively in the area of the Dukagjin Plain. The study focuses on the interior elements of rural buildings for traditional housing, called "Kulla", such as: *fireplace, WC – toilet, bathroom – hammam and corner for ablution), shelves, cupboards, bed in the men's room and trapazi – trapazani*). Therefore, in relation to the study, the village of Isniq, where still can be read the descriptors of a rural spatial development.

**Keywords:** Rural building for traditional residence "Kulla", dwellings, traditional architecture, interior elements: *fireplace, WC – toilet, bathroom – hammam and corner for ablution), shelves, cupboards, bed in the men's room and trapazi – trapazani*)



# 11<sup>th</sup> International Conference

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# RESEARCH OF ELEMENTS OF ROAD SAFETY ON THE HIGHWAY "IBRAHIM RUGOVA"

Nol Dedaj,  
Fatbardh Jakupi

UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtine, Kosovo

**Abstract:** The number of accidents on the highway is on the rise, therefore it is very necessary to research the elements of road safety on the highway that directly affect the safety of road traffic, where, through research methods, preventive measures can be taken to prevent accidents in road traffic. In the paper, the elements of the factor on the highway were investigated, which in any case can affect in an active or passive way the safety of road traffic on the highway. after the research, the elements of the road factor were also identified and their preventive measures were proposed.

**Keywords:** Elements of the road factor on highways and preventive measures

# The impact of product design in the creation of competitive advantage to small furniture production enterprise

Mevludin Shabani

**Abstract.** Many research activities have been done by different agencies and institutions about the factors that affect the state of the wood processing industry in Kosovo, so far. These factors, essentially cover the mechanism of the supply chain, starting from the condition and the health of timber in the forests of Kosovo to the export of furniture to the international market. But despite these efforts, we can say that little attention has been paid to one of the key factors, namely the implementation of the knowledge in wood processing to increase the added value as a competitive advantage; it is worth mentioning that the wood industry, in particular, furniture production is one of the most profitable branches of the country's economy. Accordingly, this paper attempts to come up with additional information based on empirical results obtained through research that would bring to light the current level of design used in the furniture manufacturing sector in Kosovo, bringing up the positive global experiences as a useful reference in the implementation of innovative technology and the identification of the most appropriate recommendations for achieving competitive advantages of small mobile manufacturing enterprises in the market. The ultimate objective of the paper is to highlight the influence of design in increasing the competitive advantages of small enterprise Kosovar mobile manufacturers in the either local or international market.

# Planning the implementation of XR Contents for Underground and Tunnel construction

Xhesika Hasa 1\*

1 Faculty of Civil Engineering, University of Business and Technology, Kosovo.

\*Corresponding author: alen.doko@fhgr.ch

**Abstract** The Hagerbach Test Gallery (Versuchsstollen Hagerbach AG or VSH AG) together with the University of Applied Sciences of the Grisons (Fachhochschule Graubünden or FHGR) want to develop an integrated Extended Reality (XR) training program for underground and tunnel construction. The aim is the active promotion of integrated real, digital, and virtual training and professional education under the name of “Hagerbach Academy”. Even though the Hagerbach Test Gallery is a traditional company with long term experience in this field, it must not forget to keep pace with modern technologies. This especially got clear during the Covid Pandemic where Hagerbach VSH AG suffered substantial revenue loss. At the same time, new possibilities such as home office and video conferences, came to light that had not been exploited before, even though there were no real obstacles regarding technical implementation. With this project the Hagerbach Test Gallery wants not just to keep pace with the usage of common technology and procedures, but it wants to be the leader when it comes to quality of training in the underground and tunnel construction. VSH AG believes that this is only possible with exploration of state-of-the-art technologies and with careful integration of it within traditional teaching methods. VSH AG together with FHGR do not want to do basic research but to concentrate on a productive approach with quick results through integration of the different expertise of both partner (VSH AG-s experience with traditional training and FHGR-s experience with XR Technologies and with modern teaching methods). Therefore, a two-year project is currently in preparation to develop advanced XR courses as part of Hagerbach Academy. These preparations or in other words planning of the implementation of XR contents for underground and tunnel construction is the topic of this paper.

**Keywords:** Hagerbach Test Gallery, underground and tunnel construction training, Extender Reality,X

# ANALYSIS AND IMPROVEMENT OF CONDITIONS IN PUBLIC TRANSPORTATION: LINE NO. 1 PRISTINA-FUSHE KOSOVA

Kizolli, beni\*, bytyqi, bekim \*\*

Ubt, construction engineering and infrastructure  
pristina, 10000 kosovo (beni.kizolli@ubt-uni.net) \*

Ubt, construction engineering and infrastructure  
pristina, 10000 kosovo ([bekim.ing@gmail.com](mailto:bekim.ing@gmail.com)) \*\*

**Abstract.** This topic aims to make a general assessment regarding the public transport service in the urban area of Prishtina, namely the line Prishtina - Fushë-Kosovë (Line No. 1), making an analysis of urban transport services and measures for improving it through the passenger survey method. In this research, random passengers of the line Prishtina - Fushë-Kosovë (Line No. 1) will be surveyed, from whom we will receive the appropriate recommendations for access, time, security information, and their conformity, to improve the quality of service and increase passenger satisfaction in the sector. I hope that these results will be a very clear indicator for the responsible municipal authorities of Prishtina, what is the current state of the urban transport service and what they should do regarding the regulation of this line for the population of this area, because as we know we face many problems. In the full sense of the word it can be said that the passenger's perspective is extremely important in assessing the quality of public transport service and gives us a realistic picture of where service needs to be improved by transport operators who are directly involved.

**Keywords:** Urban Transport, Infrastructure, Municipality of Pristina

# A simulation analysis model that impacts the vehicle end pedestrian (V=50 km/h)

DEDAJ, Nol \*, SELIMI, Bekim \*\*, KIZOLLI, Beni\*\*\*

UBT, Construction Engineering and Infrastructure Pristina, 10000 Kosovo

[Nol.dedaj@ubt-uni.net](mailto:Nol.dedaj@ubt-uni.net)

[Bekim.sele@ubt-uni.net](mailto:Bekim.sele@ubt-uni.net)

[Beni.kizolli@ubt-uni.net](mailto:Beni.kizolli@ubt-uni.net)

**Abstract:** The paper deals with traffic accidents of the “Pedestrian Hit by a Vehicle” type, creating the model through experimental tests, time and space kinetic analysis, as well as the reconstruction of accidents through the Software PC-Crash version 8.1 program. Through experimental tests, the elements of the road and vehicle factors were taken: road elements (roughness of the old and new road surface), vehicle elements (braking system equipped with and without ABS - anti-lock system), while driving the vehicle at 50 km/h during the test, sudden braking was applied, where the criterion for avoiding contact with pedestrians from the vehicle was the shortest braking trace left by the vehicle after the end of the braking process, i.e. stopping the vehicle. At the end, the real causes of road and vehicle elements in the accident are given, as well as the percentage of influence of road and vehicle factors in proportion to the human factor in accidents of the “Pedestrian Hit by a Vehicle” type.

Key-words: Model for identifying the causes of accidents.

# Impact of Civil Engineering in Energy Efficiency

Ines Bula<sup>1</sup>, Muhamet Ahmeti<sup>2</sup>, Blertë Retkoceri<sup>3</sup>, Arbëresha Kastrati<sup>4</sup>  
Visar Krelani<sup>5\*</sup>

12345 University Education for Business and Technology UBT

[Ines.bula@ubt-uni.net](mailto:Ines.bula@ubt-uni.net), [blerte.retkoceri@ubt-uni.net](mailto:blerte.retkoceri@ubt-uni.net), [muhamet.ahmeti@ubt-uni.net](mailto:muhamet.ahmeti@ubt-uni.net),  
[arberesha.kastrati@ubt-uni.net](mailto:arberesha.kastrati@ubt-uni.net), [visar.krelani@ubt-uni.net](mailto:visar.krelani@ubt-uni.net)

**Abstract.** Energy is a topic that is increasingly preoccupying engineers around the world. One of the factors that must be taken into account in the 21st century is the construction of new buildings. In Kosovo around 70% of energy consumption is from a household. Approximately 400,000 buildings have been built in Kosovo in the last 20 years, and many newer buildings are expected in the next 20 years. The energy efficiency of buildings depends on the thermal properties of its envelope, actually on the material of the walls, the type of windows and the sealing of all openings in the facades of the building and also the thermal break. In this paper we will present and analyzes of the energy efficiency of buildings, including all buildings, residential, public and industrial. Rough analyzes have shown that with interventions on existing buildings, their energy revitalization, and subsequent adaptation to new energy and environmental requirements, energy consumption for heating alone could be reduced by 20 - 40% on average. In order to achieve the desired energy efficiency of buildings, it is necessary to focus on renovating the existing buildings, which are in the majority, and that the new buildings, which are being designed and are still being planned for construction, are as energy efficient as possible in accordance with today's technical and technological possibilities. By reconstructing old buildings, replacing windows or increasing the thermal resistance of existing windows, sealing them, additionally insulating walls and roofs, we can reduce energy consumption and reduce it to the lowest possible level.

**Keywords:** Energy Efficiency, Civil Engineering, Contraction, Savings Reduce Energy Consumption

# Seismic analysis of irregular structures based on Eurocode 8

Ibrahim Ajupi<sup>1</sup>

<sup>1</sup> University of Prishtina – faculty of Civil Engineering

[ibrahimajupi@gmail.com](mailto:ibrahimajupi@gmail.com),

**Abstract.** This paper analysis the seismic behavior of a multi-story building that has no structural regularity based on the European standards for the design of earthquake-resistant structures. The analyzed structure is an equivalent system with walls, which does not meet the requirements for rigidity against torsion. Structural analysis, modal, and pushover analysis of the building are analyzed using the ETABS software. In this study, the modeling of the walls was carried out as linear but also surface models and the influence of the width of the participating vertical elements on the stiffness to the principal axes. It is presented also dimensioning of the structural elements like columns, beams, and shear walls based on the results obtained from the seismic analysis.

**Keywords:** Structural regularity, modal analysis, pushover analysis, shear wall



# A study on the use of furnace slag, fly ash and calcined clay as cementitious materials

Maria Hoxhaj<sup>1\*</sup>, Xhino Hyseni<sup>1</sup>, Sonila Vito<sup>1</sup>, Ilirjana Boci<sup>1</sup>

<sup>1</sup> Department of Industrial Chemistry, Faculty of Natural sciences, University of Tirana, Tirana, Albania

corresponding author: maria.hoxhaj@fshn.edu.al

**Abstract** Materials with a certain binding capacity have been decisive in the development and evolution of construction. This evolution has led to Portland cement and reinforced concrete being the most widely used materials in the construction industry. On the other hand, the cement industry is one of the main sources of CO<sub>2</sub> emissions and it has been estimated that those emissions reach a value of 1 ton of CO<sub>2</sub> per ton of clinker, thus Portland cement contributes with about 5% to the global production of CO<sub>2</sub>. Consequently there is a need for alternative binders with cementing capabilities, which do not harm the environment and can also bring benefits. Although the amount of waste/by-products currently used, is small compared to what is produced, studies are being carried out all over the world to find new applications for these cementitious materials thus contributing to reducing the amount of CO<sub>2</sub> released that comes from the construction industry. Industrial wastes, as well as materials of natural origin, can be used as supplementary cementitious materials to reduce clinker factor in cement (and as a consequence CO<sub>2</sub> emissions in the atmosphere), including here : fly ash, furnace slag and calcined clay. These materials can be used as mineral additives in the preparation of Portland cement, as additives in grinding or in the mixture of two or more fine materials that partially replace Portland cement. Besides the environmental part, the production of cement with fly ash and furnace slag can exhibit benefits such as improved workability, increased setting time and higher sulfate resistance than ordinary Portland cement. Furthermore the use of calcined clay promises a reduction of up to 40% CO<sub>2</sub> emissions compared to Ordinary Portland Cement (OPC) at lower investment and production costs. It is also a low carbon, sustainable, and cost effective technology. In this paper, the compressive strength of the mortars prepared with furnace slag, fly ash and calcined clay, coming from different deposits of Albania, was tested after 2, 7 and 28 days and the results were compared with that of OPC concrete (CEM I 42.5 R). The 2-days compressive strength of the mortars containing ash and slag reached a maximum of 55% of the OPC compressive strength value and after 28 days it went up to 65%, whereas the mortars containing calcined clay reached approximately 80% of the control sample compressive resistance after 28 days. These results are promising but the influence of several factors should be further studied.

**Keywords:** Supplementary cementitious materials, Clinker, Fly ash, Furnace slag, Calcined clay, Compressive strength, Ordinary Portland Cement.

# Analysis of how Accidents Affect Construction Projects in Kosovo

Muhamet AHMETI<sup>1</sup>

UBT University for Business and Technology – Prishtinë – Kosovë

[muhamet.ahmeti@ubt-uni.net](mailto:muhamet.ahmeti@ubt-uni.net)

**Abstract.** Due to the inherently dangerous nature of the construction industry, accidents of varying severity (minor, moderate, and fatal) are unfortunately not uncommon. The personal cost is high, but the damage done to the reputation of the profession is equally high. Authorities everywhere have raised the bar for site safety, leading to increased productivity on building sites everywhere. Accidents persist, though, therefore studying this topic further is essential. Accidents, from the perspective of a construction company, represent both unanticipated and unnecessary expenditures. A company's mission or even its ability to compete in its industry could be altered or even eliminated as a result of an accident. Accurately predicting potential accidents is a crucial skill for construction project managers to have. Accidents on construction sites in Kosovo raise four questions that are investigated here:

- (1) How do accidents affect building projects?
- (2) To what extent do unknown factors have a role in these incidents, ?
- (3) How do fatalities and financial losses result from accidents?
- (4) How may we improve the project's performance in light of the accident's unknowns?

This study's goals are to learn more about what factors lead to accidents on construction sites, and to find out how such incidents affect the budget, schedule, scope, and reputation of a business, as well as national safety benchmarks. The majority of construction site mishaps are the result of human error, although accidents can also occur because of ignorance or blunders. As a result, accidents are unfortunately inevitable in the building trade. Performance in construction site safety may be enhanced if all persons involved, from the project manager to the laborer, were committed to excellent practices.

**Keywords:** Construction sites, site safety, accidents, result, reputation, safety, etc

# Ukraine War impact in Civil Construction Materials in Kosovo

Visar Krelani1

University for Business and Technology, UBT, Prishtine,  
10000, Kosovo, [visar.krelani@ubt-uni.net](mailto:visar.krelani@ubt-uni.net)

**Abstract.** To face all these challenges that has give the war in ukraine due to the construction materials such as steel and petrol products its impact in the construction field have impacted all Europe and more and in this field Kosovo as country in development have impacted drastically in the import of materials, cost of transportation, project blockage etc. All this due to the differences in prices and to continue this should be done a recalculation, retender projects and a lot of other new challenges to continue that the development in the field of construction which covers mostly at 30% of Kosovo Economy should be taken seriously into consideration. This study would be based in the costume data to compare the years before and the actual development, compare the price indexes comparing the Euro Stats, Kosovo Stats and different forumal that can help to present the differences in price and calucations.

**Keywords:** Import, construction materials, indexes, Eurostat's, Kosovo Statistics

# Shrinkage, strength of high and ordinary concrete incorporating Kosovo

<sup>1</sup>Anjeza Alaj, <sup>2</sup>Tatsuya Numao, <sup>3</sup>Satoshi Murakami

<sup>1</sup>Lecturer, UBT, Prishtine, Kosova

<sup>2</sup>Professor, Ibaraki University, Hitachi, Japan

<sup>3</sup>Professor, Ibaraki University, Hitachi, Japan

[anjezalaj@gmail.com](mailto:anjezalaj@gmail.com)

**Abstract** Ordinary and high performance concrete (OC - C 25/30 and HPC - C 50/60) made with fly ash has enjoyed numerous application all over the World since 1970. In Kosovo fly ash has not begun to use at all as cement substitution in concrete despite large amount that is produced annually and positive economical - environment aspect. This hesitance has raised due to lack of experience in the concrete engineering field and because chemical composition of Kosovo fly ash, which is classified as non-standard high calcium fly ash (KF). In light of this fact, this study intended to develop further. So, this paper report the consistency, workability, shrinkage, high and ordinary compressive strength of concrete containing different percentage of non-class high calcium fly ash as Portland cement substitution (first case – Kosovo fly ash KF). To develop this research, 14 different mix designs were prepared, starting with 10% fly ash content until 50% of cement replacement and in total more than 250 specimens underwent on testing procedures during different period of curing time. All of this work took place in concrete laboratory in Kosovo.

Key words: non-standard fly ash, ordinary and high performance concrete, compressive strength, shrinkage.

# Developing of rasterial database for land surface temperature in mitrovica municipality

Edon Maliqi<sup>1</sup>, Lulzim Hajdini<sup>2\*</sup>, Loresa Latifi<sup>3</sup>

<sup>1</sup> Faculty of Architecture and Spatial Planning; UBT – Higher Education Institution,  
Pristina, Kosova, [edon.maliqi@ubt-uni.net](mailto:edon.maliqi@ubt-uni.net)

<sup>2</sup> Faculty of Civil Engineering, Polytechnic University of Tirana, Tirana, Albania,  
[lulzim.hajdini@fn.edu.al](mailto:lulzim.hajdini@fn.edu.al) (Corresponding author)

<sup>3</sup> Kosova Cadastral Agency, Pristina, Kosova, [loresa.latifi@rks-gov.net](mailto:loresa.latifi@rks-gov.net)

**Abstract** Rapid changes of land cover in the world, have become a major environmental concern. Therefore, monitoring change in land use and land cover is an important component in monitoring of Land Surface Temperature (LST) changes. In this context, the main goal of the present study is to explore the potential of Landsat-derived LST in heterogeneous ecosystems of urban areas and green areas (vegetation). The study is focused to determine the changes in the temperature of the land surface in last two decades, by making a spatial and temporal analysis in Mitrovica municipality. In order to generate the Land Surface Temperature (LST) for two time series (2000 and 2020), were obtained 30m Landsat 5 (5 August 2000) and Landsat 8 (5 August 2020) datasets, provided by the US Geological Survey (USGS) through EarthExplorer. The input data were processed and harmonized using QGIS software. The validation of the results were done by comparing with the Land Use and Land Cover (LULC), as well as by comparing with the air temperature data. Overall, the geospatial technologies used in the present study, proved effective approaches for monitoring and analyzing data on spatial and temporal changes in Land Surface Temperature (LST) in Mitrovica.

**Keyword:** Environmental monitoring, Land Surface Temperature, Landsat datasets, Time series, Mitrovica municipality.

# Role of sustainable refurbishment in the perception of quality of life of residential building occupants in Prishtina, Kosovo

Dr. Fuat Pallaska, Prof. Dr. Visar Hoxha

Department of Real Estate, College ESLG [fuat.pallaska@ubt-uni.net](mailto:fuat.pallaska@ubt-uni.net)

Department of Real Estate, College ESLG [visar.hoxha@ubt-uni.net](mailto:visar.hoxha@ubt-uni.net)

**Abstract. Purpose-**The purpose of this research work is to measure the effect of thermal, acoustic, and HVAC upgrades on the perception about the quality of life of residential building occupants.

**Design/methodology/approach-**

The present study used quantitative research with the questionnaire used as a research instrument. The questionnaire survey was conducted with one thousand and one hundred and nineteen residential apartment building occupants in Prishtina, Kosovo. The sampling method used in this research was stratified random sampling.

**Findings –** The study finds that thermal retrofits, acoustic retrofits, and HVAC upgrades as a whole model affect the perception about the quality of life of residential building occupants in Prishtina, Kosovo. Nevertheless, the study finds that not all dimensions of the constructed research model (thermal, acoustic, and HVAC) affect the perception about the quality of life of residential building occupants. Whereas thermal retrofitting seem to very strongly influence the perception of quality of life, HVAC upgrades do not seem to influence the quality of life of occupants. Finally, acoustic retrofits also influence the perception about the quality of life although not to the same degree as thermal retrofitting.

**Research limitations/implications-** The present study contributes toward the understanding of the role that is played by thermal retrofits, acoustic retrofits, and HVAC upgrades on the perception of the quality of life by building occupants in an understudied region with a booming real estate sector such as Kosovo. The present study paves the way to further analyze why HVAC upgrades do not influence the perception about the quality of life by residential building occupants in Kosovo.

**Originality/value –** The present study is the first quantification of the impact of thermal, acoustic, and HVAC upgrades on the perception of quality of life of residential building occupants in Prishtina, Kosovo.

**Keywords:** thermal retrofits, acoustic retrofits, HVAC upgrades, perception, quality of life

# Geological and hydrogeological characteristics of Livoç village, Gjilan

Bleritë Retkoceri<sup>1</sup> Arbëresha Kastrati<sup>2</sup>  
University of Business and Technology in Kosovo  
Kalabri, Prishtinë  
[blerte.retkoceri@ubt-uni.net](mailto:blerte.retkoceri@ubt-uni.net)

**Abstract.** The goal of this study was the assessment and management of underground water reserves and resources. The basis for underground water research is the knowledge of the geological construction and the lithological composition of the rocks that participate in the geological-structural construction of the region and the interpretation of the tectonic and neotectonic structure. All these are realized through the detailed geological survey of the region. The geological structure, especially the lithological composition of the water-bearing rocks, are determining factors that condition the water balance, the formation, storage, and replenishment of water reserves. The materials collected during documentation are the basis of complex studies of the aquifer and serve to perform the synthesis of hydrogeological conditions, such as groundwater maps. To provide the necessary amount of drinking water (12l/s) required in the hydro-technical project (for 3500 inhabitants of the village of Livoç), after complex studies, Kodra e Livoçit (595) was selected as a promising location for the discovery of underground water. The extraction of water and its accumulation in the village of Livoç is more than important for the choice of the problem of the water supply of the village.

**Keywords:** underground water, water supply, hydrogeological assessments, drinking water, rocks

# Geological and hydrogeological characteristics of Livoç village, Gjilan

Blertë Retkoceri1

University of Business and Technology in Kosovo

Kalabri, Prishtinë

blerte.retkoceri@ubt-uni.net

**Abstract.** The goal of this study was the assessment and management of underground water reserves and resources. The basis for underground water research is the knowledge of the geological construction and the lithological composition of the rocks that participate in the geological-structural construction of the region and the interpretation of the tectonic and neotectonic structure. All these are realized through the detailed geological survey of the region. The geological structure, especially the lithological composition of the water-bearing rocks, are determining factors that condition the water balance, the formation, storage, and replenishment of water reserves. The materials collected during documentation are the basis of complex studies of the aquifer and serve to perform the synthesis of hydrogeological conditions, such as groundwater maps. To provide the necessary amount of drinking water (12l/s) required in the hydro-technical project (for 3500 inhabitants of the village of Livoç), after complex studies, Kodra e Livoçit (595) was selected as a promising location for the discovery of underground water. The extraction of water and its accumulation in the village of Livoç is more than important for the choice of the problem of the water supply of the village.

**Keywords:** underground water, water supply, hydrogeological assessments, drinking water, rocks



# Comparison of the option between the dam in the Verbovc river and the intake of water from the Iber-Lepenci canal for the supply of drinking water for the Municipality of Drenas

Skender Bublaku <sup>1</sup>, Granit Karaqica <sup>1</sup>  
University of Business and Technology in Kosovo  
Kalabri, Prishtinë  
[skender.bublaku@ubt-uni.net](mailto:skender.bublaku@ubt-uni.net)  
[gk43118@ubt-uni.net](mailto:gk43118@ubt-uni.net)

**Abstract.** As a result of the limited water resources, the municipality of Drenas has the lowest percentage of connection to the water supply network. With only about 40% of the population served with drinking water, it is the last in the country. The study takes into account two possible options for additional amounts of drinking water, (i) the construction of a dam in the profile of the Verbovc river and (ii) the construction of a transport pipe from the Iber-Lepenci canal. The results of the study show that the construction of the dam in the profile proposed by the municipality of Drenas offers a limited amount of water intake with an average of 80 l/s, while the construction of a new pipe at the junction of the Iber-Lepenci canal is possible for 165 l/s. The construction of the dam in the profile of the Verbovc river with a height of 28 m would provide a usable volume of approximately 3,000,000 m<sup>3</sup> of water and would offer good quality water since the catchment area is protected from the impacts of human activities. Also, the construction of the dam would have a cost of 6.9 million euros, which is about 45% more than the construction of the pipe with a diameter of 550 mm and a length of 13.5 km. Considering the operation conditions, the construction of the dam offers more safety in the operation but does not provide the required quantity of water. Additionally, in the construction aspect, the process of expropriation requires a longer time and the construction of the dam has an impact on the environment of the area, for which a detailed analysis of the impacts on the ecosystem is needed. In the final analysis, the option of building the pipeline provides sufficient water, has lower costs and shorter construction time.

**Keywords:** Water supply, dam, quantity,

# **Carpool as a solution contemporary for the improvement of the transportation: The example of "Adem Jashari" Barracks**

KIZOLLI, Beni\*, DEDAJ, Nol \*\*, HAZIRI, Elhami \*\*\*

UBT, Construction Engineering and Infrastructure Pristina, 10000 Kosovo

[Nol.dedaj@ubt-uni.net](mailto:Nol.dedaj@ubt-uni.net)

[Beni.kizolli@ubt-uni.net](mailto:Beni.kizolli@ubt-uni.net)

**Abstract:** In post-war Kosovo, developments, and extensions in the capitals, and especially in the capital, have brought with them a series of complicated problems. Despite the infrastructural investments in this period, the dynamic life of the market development and the consolidation of the institutions has reflected in a dynamic life, carrying in itself many demands. One of the most vital requirements remains transportation, which affects individual budget, safety, convenience and time wastage. However, all these changes have not met the conditions for a proper urban transport and it has not affected the reduction of the use of private vehicles. In this regard, the improvement of urban transport conditions remains a priority, but also the expansion of alternatives aiming the reduction of the use of personal vehicles and enabling orientation to alternatives in order to contribute to improving the level of traffic service and preventing environmental pollution. Based on trends in developed countries, where transport demand management strategies remain their preference. In this paper, we are defined in the strategy of travel, being limited to its contribution within the institution such as the Barracks "Adem Jashari" in Pristina, with the aim of presenting as a strategy for other institutions or enterprises in the country.

**Keywords:** Adem Jashari Barracks, Prishtina, Transportation Demand Management, Travel

# Morphometric Analysis of Llapi River Watershed Using Geographical Information System

Hazir S. Çadraku\*

\* Faculty of Civil Engineering and Infrastructure, University for Business and Technology, Lagjja Kalabria, 10000

Prishtinë, Kosovo.

E-mail: hazir.cadraku@ubt-uni.net.

**Abstract:** The study area is one of the sub-river basin of Sitnica River, covering an area of 780.22 km<sup>2</sup> and lines in northeast part of Republic of Kosovo between coordinates 42°41'02" to 43°08'13" N and 20°58'35" to 21°26'35" E. In this study, Geographical Information System and a high-resolution Digital Elevation Model have been utilized for estimation and analysis morphometric parameters of Llapi River Watershed. The drainage map generated from the Land Observation Satellite-Digital Elevation Model was used for morphometric analysis of the watershed in terms of stream order, stream length, bifurcation ratio, drainage density, etc. This study identified the importance of watershed attributes for water resource management in line with the Water Framework Directive 2000/60. Several morphometric parameters have been computed and analyzed, linear aspects such as stream order, stream number, stream length, etc., areal aspects such as drainage density, drainage texture, form factor, etc. In the study area is 6<sup>th</sup> order drainage basin. The total numbers of 1219 streams were identified. The number of streams belonging to the order I, II, III, IV, V and VI were found to be 959, 201, 48, 8, 2 and 1 respectively. The total length of the streams is 1240.85 km, the mean bifurcation ratio 4.19, mean, Gravelius coefficient is 1.77. The data and information presented in this study will be helpful in drafting the plan for the management of the Llapi River Watershed which covers an area of 780.22 km<sup>2</sup> within which is estimated to live about 100 thousand inhabitants.

**Keywords:** Morphometric analysis, River, Watershed, Parameters, GIS, Kosovo.

# Problems of contemporary buildings performance and potential ways of reducing indoor air pollution

Afrim Sylal,

UBT, Lagjja Kalabria, Rr. Rexhep Krasniqi nr.56

10000 Prishtinë, Kosovë

afrim.syla@ubt-uni.net

**Abstract.** Every citizen has a right to indoor air quality that does not endanger his health. We spend on average over 90% of their time indoors – at home, in the office, in school, in kindergarten, etc. This paper is designed to point out potential problems related to indoor air quality, review steps that building owners and managers can take to investigate and correct problems, and assist in obtaining additional help with indoor air quality issues. In order to assure a healthy and comfortable indoor environment and quality for all citizens as building occupants, the key parameters must be controlled and take into account air pollutants, thermal environment, and acoustic environment. The building structure and materials as well as other sources in buildings contaminate the indoor air. Besides that, 20 to 100% of the concentrations of outdoor air pollutants are transferred to the inside of the building, adding to the pollution generated by the building itself. Considering the amount of time people spent inside and the concentrations of indoor pollutants, the buildings are the most important factor in air pollution exposure and associated health effects. Sick Building Syndrome is wide spread and may occur in offices, apartment houses, nurseries and schools, resulting in substantial costs to the community. Even though the cause effect relations are unclear it is possible to remedy buildings with SBS problems, and for new buildings the chances of avoiding SBS problems are also good. Modern people spend most of their time indoors in houses, day-care centers, schools, offices and other building facilities. . In order to achieve a sufficiently comfortable thermal environment in buildings, the following main physical parameters influence a person's sensation of warmth: air temperature, mean radiant temperature, relative air speed, and humidity. Ventilation is used to bring outdoor air to the occupied indoor zone and to remove or dilute indoor-generated pollutants. Ventilation rate, as the flow of outdoor air to a space, is one of the most important factors affecting indoor air quality. The building sector requires low cost, energy efficient building design and construction methods that utilize more renewable energy and produce higher quality of buildings. Building Information Modeling (BIM) can offer an important potential in fulfilling this need; it accommodates a rich data model that contains both graphic and alphanumeric data, supports all phases of building life cycle and allows efficient information exchange between project participants using an integrated data model.

**Keywords:** Indoor air pollutants, buildings performance analysis , sick building syndrome and reducing indoor air pollution

# Economization of precast prestressing beams of type "I" at Bridges

Arton Ajeti\*, Arsim Rapuca

Faculty of Civil Engineering and Infrastructure, "University of Business and Technology", Prishtina, Republic of Kosovo

**Abstract:** Considering the large application in the construction of the Bridge superstructure, their serial production at the factory, as well as accelerating the dynamic construction plan, economization of precast prestressed beams at serial highway bridges or long bridges is very necessary, therefore the purpose of this research is to analyze some variants in order to economize these types of beams which would also affect the cost of construction as a very important factor. The treatment and analysis of these bridge superstructure bearing elements is based on the Eurocode 2 standard (Design of concrete structures and concrete bridges; EN 1992-1-1:2004 and EN 1992-2:2004), and Eurocode 1 for loads (Actions in structures - Part 2: Traffic loads on bridges; EN 1991-2:2003). This paper contains general knowledge about precast prestressed structure elements and their use in general, their application in the construction of bridge superstructure, examples where beams with different dimensions are treated in order to achieve the greatest possible economization of these precast prestressed elements. The precast prestressed –I- beam elements are treated according to SLS (Serviceability Limit State) analyzing and calculating the necessary prestressing reinforcement, maximum stresses controls, calculating all types of losses both short-term and long-term; as well as they are treated according to ULS (Ultimate Limit State). With this paper it is possible to gain general knowledge on the application of precast prestressing beams on bridges, methods of their analysis and the possibility of their economization for serial production.

**Keywords:** Bridges, prestressing, economization, serial production

# Creation of the list of road safety indicators during the monitoring of sustainable urban mobility plans

Visar Baxhuku<sup>1</sup>, Shqiprim Ahmeti<sup>1</sup>, Lyra Bakija<sup>1</sup>,

<sup>1</sup> Kolegji Ndërkombtar për Biznes dhe Teknologji - UBT,  
Lagja Kalabria, Prishtinë, Kosovë

{visar.baxhuku, shqiprim.ahmeti, lyra.bakija }@ubt-uni.net

**Abstract.** The monitoring of the results-goals determined from the stage of preparation, planning and implementation of the Sustainable Urban Mobility Plan, is realized through the indicators that are set before the start of the monitoring. The correct determination of indicators in general and those for road safety in particular, concludes the monitoring in a successful way with valuable results for the review process. In general, the indicators for road safety are set based on the causes of accidents, taking into consideration the changes foreseen by the SUMP in the volume of traffic by category (change in the number of vehicles, increase in cyclists, pedestrians, etc.). During road accident investigations the part of traffic participants' behavior, for types of non-fatal accidents, is not investigated in detail (using the phone while crossing the road, sending SMS while walking, wearing headphones while riding a bicycle, etc.), but only the determining cause of the accident (crossing the road in an unsafe manner, carelessness of the driver towards the cyclist, etc.). Therefore, in the framework of this paper, we will examine the way a list of road safety indicators during the monitoring of SUMP can be created, by creating one such list. Since each urban area has specific differences, in addition to general indicators, specific ones must also be determined through monitoring. In the framework of the paper, the methodology of determining the list of indicators for road safety during the monitoring of SUMP has been presented.

**Keywords:** PMQU, Safety, Monitoring, Indicator.

# Synthesis of biodiesel from waste cooking oil via transesterification

Edlira Riza<sup>1</sup>, Miribane Dërmaku-Sopjani<sup>1</sup>, Osman Hasku<sup>2</sup> and Arleta Rifati-Nixha<sup>1\*</sup>

<sup>1</sup>Chemistry Department, Faculty of Mathematical & Natural Sciences, University of Prishtina, Prishtina, 10000, Republic of Kosova

<sup>2</sup>”Trepfarm” pharmaceutical manufacturer in Kosovo

{ Arleta.Rifati-Nixha, [arleta.rifati@uni-pr.edu](mailto:arleta.rifati@uni-pr.edu) }

**Abstract.** Biodiesel is an alternative fuel made from byproducts of the meat and vegetable industries, such as soybean oil and chicken fat. Alternately referred to as fatty acid methyl ester, biodiesel can also be made from algae and similar organic materials. During the production stages, the oils or fats undergo a transesterification process where the ingredients are purified, but not stripped of oxygen. The aim of this paper is that instead of dispose fried oil in environment, we collect, process and convert it into biodiesel that has many benefits such as: less toxic, emits less greenhouse gases. So it brings economic and ecological benefits to the environment. We have been able to synthesize biodiesel through transesterification reaction. First we made the titration of the oil with KOH 0.1% to know how much base we should use. After doing the calculations, we used waste cooking oil, methanol and NaOH. The oil was heated to 70°C, we add sodium methoxide and stirred for 45 minutes. After stirring, we let to sit in separate funnel for 24 hours. After 24 hours we saw two layers, which bottom layer was crude glycerol and upper layer was biodiesel. We’ve rinsed it with water twice until all the impurities are clear out and added magnezium sulphate to absorbs the water. Results obtained showed that the waste cooking oil have viscosity, free fatty acid, acid value, flash point, cloud point, density, boiling point, biodiesel reaction efficiency, no amount of water and IR spectra.

**Keyword:** biodiesel, transesterification, renewable source.

# School Building under Fire Risk Assessment

Almir Rushiti<sup>1</sup>, Meri Cvetkovska<sup>2</sup>

<sup>1</sup> Faculty of Civil Engineering and Architecture, University „Mother Teresa“,  
Skopje, Republic of North Macedonia, e-mail: [almir.rushiti@unt.edu.mk](mailto:almir.rushiti@unt.edu.mk)

<sup>2</sup> Department of Mechanics and Materials, Faculty of Civil Engineering, University  
„Ss. Cyril and Methodius“, Skopje, Republic of North Macedonia, e-mail:  
[cvetkovska@gf.ukim.edu.mk](mailto:cvetkovska@gf.ukim.edu.mk)

**Abstract.** In this paper, a qualitative and quantitative fire risk assessment of school building in Kumanovo, North Macedonia, was conducted. The elementary approach of Five Steps and the 5x5 Matrix Method for fire risk analysis were used to define the fire risk. As quantitative method, Euro-alarm Method was used to define all parameters that influence the fire risk. Based on the results of the performed analysis, it was found that the school does not meet the fire safety measures and this is due to the following factors: lack of appropriate fire protection measures, lack of fire detector and lack of fire department.

**Keywords:** Matrix Method, Euro-alarm Method, fire, fire assessment



# The Impact of Digital Technology on the Effectiveness and Efficiency of Engineering Enterprises

Ylber Limani<sup>1</sup>,

<sup>1</sup> UBT, Prishtina, Kosovo

ylber.limani@ubt-uni.net

**Abstract.** The purpose of this paper is to analyze and synthesize the impact of digital technology on engineering and management issues within businesses and organizations dealing with construction engineering. The research examined how the increase in digital technology implementation influenced engineering and management productivity within construction engineering business processes. The descriptive-analytical qualitative and correlational quantitative research methods are used to gather, select, and analyze secondary and primary data, and to test the research hypotheses. Data analyses are expected to provide with important information related to the increasing correlation between the scale of digital technology implementation and productivity change in construction projects.

**Keywords:** Digitalization, Data Science, Artificial Intelligence, 3D Printing, Cloud Computing, IoT.

# Practices for the Adjustments of Changes in Cost for Construction Projects due to the Inflation of Material Prices in our Region

Ilir Hetemi<sup>1</sup>, Ragip Behrami<sup>2</sup>

<sup>1</sup> Assistant Professor at UBT, Kalabri, 10000 Pristina, [ilir.hetemi@ubt-uni.net](mailto:ilir.hetemi@ubt-uni.net)

<sup>2</sup> PhD candidate at Ss. Cyril and Methodius University-Skopje, [rbehrami@gmail.com](mailto:rbehrami@gmail.com)

**Abstract.** Construction projects take time to be completed, and during this period sometimes the changes of prices in construction field have considerable influence in the overall budget for that project. In the good practice regarding this issue, in the offered documentation is presented how this will be taken into account if the prices are changed over a certain limit. If not, then the contracting authority and the contractor have to find an accepted method approach, how these changes will be applied in the overall cost. Here in the paper will be presented some of the practices for the adjustments of changes in the cost that can be applied as a method in order to take into consideration the changes of prices during the implementation period for the contracts in our region.

**Keywords:** Adjustment, Revision, Price, Contract.

# Build a green and healthy home - Radon Resistant New Construction

Driton R. Kryeziu<sup>1</sup>, Mevlan Qafleshi<sup>1</sup>, Ibrahim Ajupi<sup>2</sup>

<sup>1</sup>UBT, Faculty of CEI, Prishtinë, Kosovo

<sup>2</sup>University of Prishtina, FCE, Prishtinë, Kosovo

**Abstract.** Undetectable by our senses, radon is a naturally occurring radioactive gas that is formed from the decay of uranium-238 (<sup>238</sup>U) in rocks and soil. Its increased levels expose health hazard to humans living or working in old and new houses and buildings, well-sealed or drafty homes, residences and working places with or without basements. Our buildings act like vacuum cleaners, drawing radon from the soil through cracks, holes, and other penetrations in the foundation and into the building. In general its high levels in the air are hazardous to all humans, but young people in particular are mostly vulnerable to its radioactive effect. Based on Environmental Protection Agency (EPA) estimates, lung cancer due to radon exposure claims about 21,000 U.S. lives annually. In every country, based on national average levels of radon and prevalence of smoking, it is estimated that around 3-14 is the percentage of radon related lung cancers. In Europe, radon in the home accounts for about 9% of deaths from lung cancer and 2% of all deaths from cancer. What about in Kosovo ?! Everyone subjected to long-term exposure of excessive levels of radon incurs an increased risk of developing lung cancer, this risk increasing linearly with the radon concentration (measured in Becquerel per cubic meter, Bq/m<sup>3</sup>). As it is a global problem, our country, without being any exception should deal with this issue in order to reduce the risk of cancerous and other diseases deriving from radon inhalation or contact. A technically effective, easy and low cost way of radon concentration reduction is presented in this paper. It is the contribution of this paper to establish an applicable engineering method in constructing building with reduced hazard from radon.

**Keywords:** Green Building, Radon, Lung Cancer, Construction.

# PROCESSING AND INTERPRETATION OF SATELLITE IMAGES USING "QGIS" SOFTWARE

Geodesy Engineer Xhesika Hasa

**Abstract** In the world we live in, a special importance is being given to the environment. We are its biggest polluters, but we are the ones who must protect it. Designing measures for the protection of the environment first requires the analysis of the current situation in which we find ourselves. This analysis can be done with different methods which have their own characteristics and accuracy. Recently, identification methods from the air have taken on a special importance. Remote Sensing or Hyperspectral Image, also known as Hyperspectral (or Spectroscopic) Image, is one of the most advanced technologies in the development of Satellite Imaging, with beginnings in the early 80s, currently continues to be studied and is developed, with the aim of enabling the discovery and identification of minerals, vegetation on the ground, environmental parameters as well as materials or objects derived, or even man-made. This technology provides spatial-spectral data, based on technological developments in the production of hyperspectral sensorial systems, which collect and record reflective and emissive data in a very wide range of the electromagnetic spectrum, including its visible part. . In my paper I dealt with the classification of satellite images by creating a thematic map that defines each natural and human activity by means of colors. This allows researchers to make relevant interpretations on the state of the environment and not only on the surface of the lands and/or water. Digital image classification uses spectral information represented by numbers for one or more spectral bands, and on this basis attempts to classify each individual pixel of this information. This type of classification is known as Spectral Component Recognition or multispectral classification. The objective of this process as a whole is to define all the pixels in the image according to classes or special layers (eg water bodies, degraded forests, cereals, planted greens, etc.). At the end of this process, the resulting classified image is a "compromise" of pixel mosaics, each of which belongs to a separate theme and is essentially a thematic "map" of the original image.

# USING ARC MAP IN THE PROCESS OF EXPROPRIATION

Xhesika Hasa 1\*

1 Faculty of Civil Engineering, University of Business and Technology, Kosovo.

\*Corresponding author:hasaxhesika3@gmail.com

**Abstract** Based on the articles, protocols provided in the Laws, the European Convention, the Constitution of Kosovo, the General Declaration on Human Rights, we conclude that the protection of property rights is guaranteed by the Constitution of Kosovo, the laws of the Republic of Kosovo, European Convention, and the General Declaration on Human Rights, and that private real estate can be expropriated by applying the laws in force, and only when this is necessary for the purpose of developing works of general social interest, and fulfilling the certain conditions such as: the expropriation is done to achieve a legitimate public goal; the immovable property which is the object of expropriation does not have any other purpose or discriminatory intent, and the Compensation must be made fairly, and based on the market value of the immovable property being expropriated. Kosovo, as a small and not very developed country, has a great perspective in its development based on infrastructure. From the post-war period until today, great importance has been devoted to the development of road infrastructure. The development of new industries, the construction of buildings, the growth of the population and the changes in its demographic distribution, the increase in the demand for personal transport and many other reasons have brought the expansion or construction of new roads into the center of attention.

**Keywords:** Parcel, Expropriation, Digitalization, ArcMap.

# **A limit analysis approach to the assessment of masonry arch structures under the influence of fundamental parameters**

Bledian Nela<sup>1a</sup>, Alejandro Jiménez Ríos<sup>1b</sup>, Marco Pingaro<sup>1c</sup>, Emanuele Reccia<sup>2d</sup>,  
Patrizia Trovalusci<sup>1e</sup>

<sup>1</sup> Department of Structural and Geotechnical Engineering, Sapienza University of Rome;

Via Antonio Gramsci 53; 00197 Rome; ITALY; a

bledian.nela@uniroma1.it, balejandro.jimenezrios@uniroma1.it, c

marco.pingaro@uniroma1.it, e

patrizia.trovalusci@uniroma1.it <sup>2</sup> Department of Civil and Environmental Engineering, University of Cagliari;

Via Marengo 2; 09123 Cagliari; ITALY; demanuele.reccia@unica.it

**Abstract.** The majority of buildings in the world are made of masonry, and some of these buildings are historical constructions with heritage values. It is commonly known that masonry can withstand significant compressive stresses, but since it lacks tensile strength, it is more susceptible to dynamic actions. In this aspect a curvature was introduced in masonry constructions in order to reduce the tensile stresses and exploit their compressive strength. This innovative structural element in the past enabled crossing large spans without intermediate supports at the cost of a horizontal thrust transmitted to the supports. The structural condition of the supports constructed of masonry is of crucial importance to resist this horizontal force that varies in intensity based on the type of curvature of the arch. Additionally, a non-standard approach including joint friction has shown to be important in such structures and therefore sliding mechanisms are investigated. Research on critical parameters affecting the safety levels of piers under the thrust of arches is carried out using an in-house code (ALMA) that uses limit analysis as a rigid block approach to modeling masonry with frictional joints. Under two cases of vertical live load, symmetric and asymmetric, the different pier textures, levels of joint friction and arch shallowness, were examined. The main outcomes of the study demonstrate that even before initiating any expensive testing campaign, complex structural analysis, the investigation of these parameters in the structure itself present the most important features of its safety level and vulnerability.

**Keywords:** joint friction, masonry arches, limit analysis, dry-joints, shallowness, texture

# Comparative Control of the Construction Accuracy of the Seven Floor Building with the Structural Design

Ragip Behrami<sup>1</sup>, Arton Ajeti<sup>2</sup>, Ermal Osaj<sup>3</sup>, Alban Xhema<sup>4</sup>

Ragip Behrami, PhD student, Ss. Cyril and Methodius University, Institute of Earthquake Engineering and Engineering Seismology – IZIS Skopje,  
[rbehrami@gmail.com](mailto:rbehrami@gmail.com)

<sup>2</sup>Arton Ajeti, MSc., University of Prishtina “Hasan Prishtina”, Faculty of Civil Engineering, Prishtina, Republic of Kosovo, [artonajeti24@gmail.com](mailto:artonajeti24@gmail.com)

<sup>3</sup>Ermal Osaj, BSc., University for Business and Technology UBT, Faculty of Civil Engineering, Prishtina, Republic of Kosovo, [ermalosaj@gmail.com](mailto:ermalosaj@gmail.com)

<sup>4</sup>Alban Xhema, BSc., University of Prishtina “Hasan Prishtina”, Faculty of Civil Engineering, Prishtina, Republic of Kosovo,  
[albanxhemal@gmail.com](mailto:albanxhemal@gmail.com)

**Abstract.** In the framework of quality implementation criteria during the construction of multi-story buildings in the capital of Kosovo, Prishtina, among others, it is required that in the structural design phase to control inter-story drifts, respectively to determine whether the P-delta effect should be taken into account during the structural design. In addition, in the framework of the criteria for quality control of the construction, it is foreseen the regular control of the accuracy of the verticality during the construction of the vertical structural elements (columns and diaphragm walls) which are ascertained with regular geodetic measurements in each floor level. In this paper, the authors present the research carried out by checking the vertical elements executed in a seven-story building built in Prishtina, then have presented a comparison between the designed and executed values of inter-story drifts. Through this research, the authors want to emphasize the importance of the accuracy of the realization of vertical elements, their precise control and if necessary to perform additional analytical control taking into account the vertical deviations during construction.

**Keywords:** Verticality of structural elements, inter-story drifts, regular geodetic control, deviations during construction.

# ROUNDABOUTS PAVEMENT, ASPHALT MIX AND MATERIALS

Bekim Selimi

UBT - University for Business and Technology; Prishtinë, Republic of Kosovo

Email: [bekimselimi@gmail.com](mailto:bekimselimi@gmail.com)

[bekim.selimi@ubt-uni.net](mailto:bekim.selimi@ubt-uni.net)

**Abstract.** As over in the world, same in Kosovo, the roundabout intersections are becoming a regular sight. However, roundabouts are a little more complicated to construct and pave than regular intersections. The flow of traffic on roundabouts can mean different wear and tear on road surfaces, and thus it is important to plan a roundabout paving construction project carefully, use the right asphalt mixes and compact surfaces in a way that ensures longevity without major damages. In most of cases, road and other pavements are designed for vertical loadings only. On the roundabout itself, shear stress are high due to centrifugal forces, therefore at those locations may observe severe shoving, cracking and slippage. The asphalt mixes using at roundabouts should offer better resistance to horizontal shear force than those used in other conventional roadway applications. With the load of traffic on roundabouts, rutting and shoving of material can occur, so it's important to choose a mix that can handle such pressures. The design of asphalt mix should be focused on optimizing few components that affect shear resistance: characteristics of asphalt cement, gradation of aggregates, aggregate angularity, good frictional characteristics of the mix and also should have in consideration the weather conditions and temperatures of the region. Developing a type of the asphalt mix that can offer excellent shear resistance and frictional characteristics, and using proper materials, is the focus of this study.

**Keywords:** Roundabouts, Shear stress, Asphalt mix, Aggregates



# 11<sup>th</sup> International Conference

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# Radiation and photocatalytic removing of some pharmaceuticals discharged with hospital wastewater

Ilijan Malollari<sup>1\*</sup>, Violeta Lajqi<sup>2</sup>, Evelina Bazini<sup>3</sup>, Jonilda Llupa<sup>4</sup>

<sup>1\*</sup> Dept. of Industrial Chemistry, Faculty of Natural Sciences, University of Tirana, Albania

<sup>2</sup> UBT - University for Business and Technology, Prishtine, Kosove

<sup>3</sup> University "Ismail Qemali", Vlore, Albania

<sup>4</sup>Laboratory of Food Chemistry and Food Microbiology, Department of Chemistry, University of Ioannina, GR-45110 Ioannina, Greece

ilirmalo@gmail.com

**Abstract.** Wastewater discharged from the activity of the Regional Hospital of Vlora-Albania has been basically source and environmental quality survey for this study. Pharmaceutically active compounds (PhACs) can cause pollution of the environment because of the presence in it of very low concentrations in the effluent waters from the hospital activity. These waters are collected with the public water sewage system causing extra pollution causing health problems for the population living nearby and for other domestic animals and cultivation plants. Firstly, it was needed characterization of the hospital wastewaters and identifying the most present pharmaceuticals in there. In the study case of regional hospital, it was considered their impact on the environment once they enter our wastewater wells collectors around the hospital which wrongly are mixed with public sewage in the pipelines under no authority control, can be dangerous during exposing. In order to know the situation of the contamination level from the hospital wastewaters discharged continuously into the drainage we have found different pharmaceuticals present persistently. Some samples were taken and examined by analyzing them at instrumentalized laboratories for nutrient and other trace elements. Then we measured the pH, conductivity, temperature and other indicators for the supplying water in hospital and in the wastewater effluents after its usage in there. The integrated study was finalized in realization of partly reactor design and installing of a pilot plant photo catalytic reactor in the Vlora Hospital premises, deeply information from the experience of the similar design pilot plants. From the practical tests performed with the real pilot plant, some promising results were taken for the destroying rate of some pharmaceuticals in such discharged wastewater.

**Keywords:** wastewater, hospital effluents, pollution loads, treatment plant, photo catalytic reaction

# **Kosovar farmers and their knowledge about sustainable and conventional production techniques**

Lumta Dida<sup>1</sup>, Ben Dida<sup>2</sup>

<sup>1</sup>UBT Higher Education Institution, Lagjja Kalabria p.n., Prishtina, Kosova

<sup>2</sup>Hybrid Agro – Consulting Company for Agriculture

**Abstract.** In agriculture, there are different methods and practices in the cultivation of plants, and based on these methods and practices, agriculture can be generalized into sustainable and conventional, depending on the techniques used. The goal of sustainable agriculture is to cultivate a number of plants without using chemicals and synthetic fertilizers, improving the structure of the soil and promoting biodiversity. This traditional method of agriculture relies on ecosystem services, being mentioned at the same time as being produced in sufficient quantities. As for conventional agriculture, its methods use chemicals and synthetic fertilizers to maximize the yield of the crop or crops, which are usually genetically modified. These methods require significant amounts of chemicals and energy and weaken the ecology of a landscape. This research was carried out during the months of April-May-June 2022 in two regions of Kosovo, that of Dukagjin and Anamorava. A total of 100 farmers (graduates and men) with different sizes of farms were met and interviewed about the knowledge they have on the differences between integrated and conventional production. Out of the 100 farmers interviewed, 47 of them had knowledge about sustainable agriculture techniques and 30 of them applied these methods, while 53 farmers had never heard of sustainable agriculture, but during the conversation with them it was noted that 20 of the farmers implement some of the methods of sustainable agriculture.

**Key words:** agriculture, sustainable, conventional, chemicals, farmers

# Safety and hygiene of traditional Rugova cheese

Artan Studenica

University of Pristina, Faculty of Agriculture and Veterinary Medicine, Department of  
Food Science and Technology, Pristina, Kosovo

[a-studenica@hotmail.com](mailto:a-studenica@hotmail.com)

**Abstract:** The demand for traditional cheese is increased in recent years, same is also for the traditional cheese produced in Rugova region. Since very little research has been done regarding the safety, this study analyzed the presence of microbiological indicators in this type of cheese. *Listeria monocytogenes*, *Salmonella spp.*, *Staphylococcus aureus* and *Escherichia coli* were analyzed. Out of 42 samples analyzed, none of them tested positive for the presence of *Listeria monocytogenes* and *Salmonella spp.*, while *Staphylococcus aureus* and *Escherichia coli* was detected in 8 (19.04%) respectively 11 (26.19%) samples. Based on results, we conclude that, in general, this cheese is safe for consumption, but it also carries a dose of uncertainty due to the unsatisfactory level of hygiene. Further research is needed to determine whether there are pathogenic strains of *Escherichia coli* or enterotoxins of *Staphylococcus aureus*, especially in samples where their number exceeds the value  $> 10^6$  CFU/g.

**Keywords:** traditional cheese, *Listeria monocytogenes*, *Salmonella spp.*, *Staphylococcus aureus*, *Escherichia coli*.

# Microbiological analysis in waters of river Mirusha (Kosovo) during the spring season of the 2015 year

Ilmije Vllasaku<sup>1</sup>, Kemajl Kurteshi<sup>2</sup>

<sup>1</sup> UBT College -Higher Education Institution, Kosovo

<sup>2</sup> Department of Biology, Faculty of Natural Science, University of Prishtina,  
10000 Prishtina, Kosova

[ilmije.vllasaku@ubt-uni.net](mailto:ilmije.vllasaku@ubt-uni.net)

**Abstract.** Industrialization and urbanization have degraded natural resources globally. The main objective of this study is to estimate the quality of water, of the river Mirusha (Gjilan, Kosovo), during the spring season 2015 year, through the microbiological analysis. River Mirusha is located in the southeast part of Kosovo, which passes through the city Gjilan. Samples for microbiological analyses are collected in three localities along the river. Microbiological analyzed parameters are: Heterotrophic bacteria, Total coliform bacteria, SS (Salmonella and Shigella), Streptococcus faecalis, and Fungi According to the bacteriological analysis show that waters of the river are polluted microbiologically. The river section examined during this investigation demonstrates the river water belongs to the second class of quality.

**Keywords:** microbiological, river, Mirusha, analysis, water

# Determination of rheological parameters and difference between bread flour and special flour

Amar Bajraktari<sup>1</sup>, Lorikë Salihu<sup>1\*</sup>, Blend Borqi<sup>2</sup>

<sup>1</sup>Academic staff at UBT Collage, Prishtinë-Kosovo

<sup>1</sup>Student at UBT Collage, Prishtinë-Kosovo

<sup>2</sup>Quality manager at M&Silloso Corporation Xërxë-Kosovo

lorike.salihu@ubt-uni.net

[ab49385@ubt-uni.net](mailto:ab49385@ubt-uni.net)

**Abstract.** Nowadays, the consumption of products derived from wheat processing has found great applicability, taking advantage of the benefits we receive in relation to nutritional values as well as specific interests for different final results. The flour content is a limitation, but at the same time an indicator of how our relationship with that flour will be to produce a quality and healthy final product. This work was done in order to obtain detailed information on how the content of special type flour differs from bread type flour, by doing physical-chemical laboratory analyzes and determining rheological parameters such as: moisture content, ash content, gluten content, degree of acidity, enrichment of iron and folic acid, ability to drink water, development, stability, degree of softening, qualitative number, qualitative group, energy, resistance, maximum resistance. This work was done in the period of May 2022 where two samples were analyzed in the laboratory of the M&Silloso factory in Xerxe.

**Keywords:** Rheology, wheat, gluten, farinography, extensography, extensibility

# Identification and Characterisation of Lactic Acid Bacteria from Traditional Albanian Yogurt

Rozeta Hasalliu<sup>1\*</sup>, Johanna Brandley<sup>2</sup>, Konrad Doming<sup>2</sup>

<sup>1</sup>Agricultural University of Tirana, Koder, Kamez, Street “5 Maj”, 1012, Tirane,  
Albania

<sup>2</sup>University of Natural Resources and Life Sciences, Vienna, Austria

rhasalliu@ubt.edu.al

**Abstract.** The aim of this study is to explore the diversity of the predominant lactic acid bacteria (LAB) species occurring in traditionally prepared Albanian yogurt for the first time. The samples of traditional Albanian yogurt were collected from 34 regions of Albania, and more than 5 samples for each region. The yogurt is produced without the addition of starter cultures only with back-slopping inoculation. The total colony count was between  $10^2$  - $10^8$  cfu/ml. Using MALDI TOF-MS technique are identified 5 genera of Lactic acid bacteria from traditional yogurt samples, *Lactobacillus*, *Streptococcus*, *Lactococcus*, *Leuconostoc*, *Enterococcus*, and 11 species like *Lactobacillus delbrueckii*, *Lactobacillus helveticus*, *Lactobacillus coronyformis*, *Lactobacillus paracasei*, *Lactobacillus fermentum*, *Streptococcus salivarius*, *Lactococcus lactis*, *Lactococcus garviae*, *Leuconostoc lactis*, *Enterococcus durans*, *Enterococcus faecium*. The presence of contaminants and yeast in yogurt samples means that the need of good hygienic practice, rapid cooling of final product and implementation of HACCP is very necessary for small yogurt Albanian producers.

**Key words:** Lactic acid bacteria, MALDI TOF-MS, characterization, traditional Albanian yogurt, diversity.

# Sustainable Cities: Environmental benefits and ecological impact of urban green spaces

Nexhat Balaj<sup>1</sup>, Agim Zajmi<sup>2</sup>, L Lazar Haxhinasto<sup>3</sup>

<sup>1</sup>UBT - Higher Education Institution, Lagjja Kalabria p.n., Prishtina, Kosova

<sup>2</sup>University of Prishtina “Hasan Pristina”, Faculty of Agriculture  
And Veterinary, 10000, Prishtina, Kosovo

<sup>3</sup>Agricultural University of Tirana, Department of Horticulture,  
Faculty of Agriculture and Environment. Albania

[nexhat.balaj@ubt-uni.net](mailto:nexhat.balaj@ubt-uni.net)

**Abstract.** The purpose of this paper is to present how quality of public spaces and urban vegetation contribute positively to people's quality of life. From the historical time period, human being has appreciated greenery to find the flavor of life, form some physical and psychological dependency on nature. People depend on fresh air, natural attraction and landscape which indicate public natural perception and social behavior. However, nowadays, due to the population growth and urbanization, ecosystems and natural landscape are changing drastically. Green and open areas can be public or private properties and are differentiated by their function, their ecological value and their belonging to other land use types. Urban vegetation and green spaces are considered as indicators of both quality of life and urban sustainability. Urban green spaces comprise a range of habitat types that cross a continuum from intact remnant patches of native vegetation, brownfields, gardens, and yards, to essentially terraformed patches of vegetation that may or may not be representative of native community associations. Urban vegetation provides a wide variety of ecosystem services, including air quality improvement, climate regulation, and other elements that enhance urban environmental quality. Vegetation in Pristina is comprised of a wide variety of species such as: landscaping shrubs, urban trees, flowers, woodland, tall shrub, conifers, herbaceous and other vegetation.

**Key words:** Ecological, sustainable city, green space, trees, shrubs, greenery.



# Irradiation of fish and fish products – opportunities and perspectives

Marija Boshevska<sup>1</sup>, Dijana Blazhekovikj - Dimovska<sup>2</sup>

<sup>1</sup>OSMU “D-r Jovan Kalauzi”, Bitola, Macedonia

<sup>2</sup>University „St. Kliment Ohridski“, Faculty of Biotechnical Sciences, Bitola,  
Macedonia

[bosevskam@yahoo.com](mailto:bosevskam@yahoo.com)

**Abstract.** In the constant struggle of the human population with the factors that contaminate and spoil food, treating food with ionizing radiation is becoming a more common trend, offering many advantages compared to traditional methods of food preservation. Regarding fish and fish products, this procedure is becoming an increasingly common choice, allowing non-thermal preservation of their stability. This paper presents the reasons for choosing irradiation in maintaining microbiological safety and extending the shelf life of fish and fish products, the doses recommended by the relevant international institutions, examples from practice, changes in organoleptic characteristics depending on the dose of irradiation, a comparison of the legislation in the countries that allow the treatment of this type of food with irradiation and a presentation of the standards and methods for the detection of treated fish and fish products. In the extensive literature found on this issue, it is noted that treating fish and fish products with ionizing radiation is a regular procedure in the USA and Asian countries, which are the largest consumers of this type of food. While doing so, choosing the optimal dose of irradiation is of primary importance due to the appearance of unpleasant odors and tastes that make them unacceptable to consumers.

**Keywords:** Irradiation, Fish and fish products, Shelf life

# Physico-chemical examination and enzymatic activity of Manuka Doctor 30 and 70 MGO honey types compared to some types of honey from the Llap region

Lirika Humolli<sup>1</sup>, Arleta Rifati-Nixha<sup>1</sup>, Miribane Dërmaku-Sopjani<sup>1\*</sup>

<sup>1</sup>Chemistry Department, Faculty of Mathematical & Natural Sciences, University of Prishtina,

Prishtina 10000, Republic of Kosova,

miribane.dermaku@uni-pr.edu

**Abstract.** Recently, there is a growing demand worldwide from consumers for natural foods and foods that claim to boost immunity as well as for better human health. Honey has an advantage in this regard as it contains oligosaccharides in addition to a wide range of other valuable nutrients. Honey, one of the main products of bees, is a sweet viscous juice made from plant nectar. The International Honey Commission (IHC) has proposed certain ingredients as quality criteria for honey. These ingredients include: moisture content, electrical conductivity, reducing sugars, sucrose content, minerals, free acidity and hydroxy methyl furfuralin (HMF) etc. The purpose of this research is that through the determination of physico-chemical parameters, biochemical and enzymatic activity and using classical and advanced methods to make a comparison between the two honey samples from New Zealand and samples from the Llap region. Simultaneously, in this research analyzed which of the samples has a better quality. Samples were analyzed for physicochemical parameters including pH, free acidity, moisture content, ash content, electrical conductivity, reducing sugars, as well as diastase enzyme content, HMF content. pH values ranged from 3.86 to 4.92 while free acidity varied from 8.65 to 10.46 meq / kg honey. Conductivity electrical (0.587- 0.813 mS / cm), ash content (0.328- 0.545%), high copper level in sample from Llap region, reducing sugars (48.24 - 67.64%), moisture content (13.71 - 14.20%), and HMF content (10.49-12.53 mg / kg honey) were detected. The results obtained from this study showed that honey samples taken from New Zealand in the study area are of better quality than samples from the Llap region and complement national and international standard borders.

**Key word:** Honey, HMF, Diastase, Quality.

# Isolation and characterization of gluten from wheat flour and determination of gliadin and glutenin

Edita Halili<sup>1</sup>, Arleta Rifati Nixha<sup>1</sup>, Miribane Dërmaku-Sopjani<sup>1\*</sup>

<sup>1</sup>Chemistry Department, Faculty of Mathematical & Natural Sciences, University of Prishtina, Prishtina, 10000, Republic of Kosova

miribane.dermaku@uni-pr.edu

**Abstrakt.** It is important to do research on proteins as one of the main constituents of cells in living organisms. There has been a growing interest in gluten over the past two decades because of its crucial role in causing celiac disease and its perceived role in other adverse reactions to wheat. The purpose of this paper is to isolate a plant protein which is found in some types of cereals. This protein is gluten which is found mainly in wheat and some other cereals such as rye, oats and barley. Wheat gluten has an extraordinary impact on human nutrition as it largely determines the processing properties of wheat flour. Due to its special properties gluten helps to increase the dough and keep its shape, precisely the viscoelastic properties and elasticity of the dough makes a better structure of the dough of bread, pasta and in general of all foods consisting of wheat flour. Wheat flour fulfills essential biological role as the main protein of wheat, as it is the main determinant of functional (processing) properties of wheat. Gluten is a very complex mixture of proteins, composed of specific proteins gliadin and glutenin. Gluten isolated through washing the dough with water and ethanol. First the dough is prepared and then washed with water in order to remove the whole amount of starch which is soluble in water while gluten is an insoluble protein in water. To confirm the presence of amino acids in gluten protein was realized qualitative analysis through relevant tests, Biuret, Xanthoproteic, Ninhidrin, Nitroprusside, Fohl, Paul and Amide Test. The amount of gliadin and glutenin is calculated mathematically. The results obtained were satisfactory and showed that the amount of gluten in three different samples of wheat flour was at the allowed standard values 9-14%. In this study also verified that the amount of gluten in expired wheat flour "Fellini" was not the same, due to the degradation of gluten protein.

**Key word:** gluten, gliadin, glutenin, wheat flour.

# Raw milk destined for industry and the fund of cows in Kosovo farms during the COVID-19

Medin Zeqiri<sup>1</sup>, Valon Derguti<sup>1</sup>, Fidan Feka<sup>1</sup>, Vezir Januzi<sup>1</sup>, Mergim Mestani<sup>1\*</sup>

<sup>1</sup>University for Business and Technology-UBT; Department Food Science and Biotechnology Pristina, lagja Kalabria, 10000, Republic of Kosovo, [mergim.mestani@ubt-uni.net](mailto:mergim.mestani@ubt-uni.net)

**Abstract:** The purpose of this paper is to analyze the amount of milk that the producers send to the processing industry, excluding the milk that is used for family needs, the milk that is spent on feeding the calves, as well as the research of the dairy cow fund. 242 dairy farms were investigated with a random sample in the seven regions of Kosovo, such as: Gjilan, Prishtinë, Ferizaj, Pejë, Gjakovë, Prizren and Mitrovica. The interviews included farms with a capacity of 5 - 120 dairy cows, all these farms are directed to the market and also have a contractual relationship with the dairy industry. Quantitative data on milk destined for the market and the number of cows were obtained directly in the field during the months of January-April 2021 by the author through direct interviews with a standard and well-structured questionnaire, while qualitative data through observation and direct surveys in the field, also observing breeds, stable infrastructure, food, hygiene, well-being, environmental treatments, etc., for the time period 2019 and 2020. The milk destined for the market in 2020 in medium-sized farms up to 20 cows was 35921.34 liters, while in those over 20 cows, it was 166279.89 liters of milk. A small decrease in the number of cows was also observed between 2019 (14.26 cows per year) and 2020 (13.75 cows per year). Farmers reported that the restrictive measures as a result of Covid-19 have negatively affected production, milk destined for the market, the cow stock, as they were forced to leave more milk for the consumption of calves, for family needs, a part are distributed to the residents of the areas, a large part has been wasted or destroyed as a result of the purchase restrictions from the dairies because they were also very limited in the market for placement of products during the period of Covid 19 pandemic. The statistical data has been processed in SPSS. Policymakers and the state should undertake stronger and adequate measures in terms of supporting the sector, as well as the advisory services should sensitize farmers on the diversification of farms in order to minimize losses in such situations.

**Key words:** farmers, cow, raw milk, industry, COVID-19.

# Influence of Preparation Technology and Storage Condition on the Bacterial Growth in Cream

Fëllanza Begolli, Flutura C. Ajazi, Arianeta Nura, Ibrahim Mehmeti  
Department of Food Science and Technology. University For Business and Technology  
(UBT), Prishtina  
ibrahim.mehmeti@ubt-uni.net

**Abstract.** Milk is highly important product containing different proteins, fats, lactose, various vitamins and minerals. Different products made from milk do they exists. Cream is one of them. Cream is a dairy product composed of the higher- fat concentration from the top of milk before homogenisation. The aim of this work is to analyse differences between home-made cream and different dairy technology and effect of temperature after processing in microbiological aspects. Total viable counts by using count plates have been analysed from samples which is cream has made in home by traditional methods and from companies which used more professional technology. In same time cream has saved in different temperature (4°C, 25°C and 37°C) in different time points has been analysed. Differences in microbiological aspects between homemade cream and dairy company do they exist. Advantages and disadvantages are in both sides. Microflora of homemade variate up to  $10^5$  while from new technology level of microorganisms is very low. However, in different temperature, level of total viable counts increases in same range between each other.

**Keynote:** Cream, stress response, total viable count.

# Quality characterisation of traditionally made yoghurt

Valmira Ferati Mehmeti, Mergim Mestani, Flutura C. Ajazi, Ibrahim Mehmeti  
Department of Food Science and Technology. University for Business and Technology  
(UBT)

ibrahim.mehmeti@ubt-uni.net

**Abstract.** Yoghurt is considered healthy food product and very popular containing different bacteria possible to use as a probiotic. The product is very healthy, especially when it's made in natural form without adding any additives making it even healthier. In our country yoghurt is one of the most used products and almost all farmers and dairy companies produce it. However, receipts are different depends on culture or methodologies from farmer to farmer, or from companies to company and this it makes different in test and in quality. Based on that, organoleptic analyses, physico-chemical analyses, and some microbiological parameters has been study. Questioners has been made and around 190 people has been interviewed for organoleptic analyses, acidity, fat, proteins, aroma and salt in physico-chemical aspect and total viable count and diversity of lactic acid bacteria has been analyse. Results show that theof people regarding to yoghurt is positive, but it needs to be changer on taste. The differences between homemade yogurt and company do exist. No significant differences have been shown in phyco-chemical aspects. While, in microbiological aspects total viable counts variate and diversity of lactic acid bacteria exist. This shows that, different technology is used from different company and farmers are used. Differences in the taste of yoghurt could be from adding different starter culture.

**Keynote:** Yoghurt, sensory, physico-chemical, and microbiological analysis

# COMPARISON OF THE PHYSICO-CHEMICAL AND MICROBIOLOGICAL PARAMETERS BETWEEN THE OIL AND THE OIL PACKAGED IN THE "FLOIL" COMPANY

Fortesa Rexhepi<sup>1</sup>, Lorikë Salihu<sup>1\*</sup>

<sup>1\*</sup> Academic staff at UBT Collage, Prishtinë-Kosovo

<sup>1</sup> Student at UBT Collage, Prishtinë-Kosovo

lorike.salihu@ubt-uni.net

**Abstract.** The object of this study is to follow the qualitative parameters of vegetable oil produced in Gjilan, Kosovo. Samples were taken during the period of time from July to September 2022 and are analyzed the physic-chemical and microbial parameters to determinate the quality of unrefined oil and bottled oil dedicated for consume. The production of vegetable oil in Kosovo, after the pandemic situation and the economy situation in Kosovo in 2022 as one of the most important products for consume. The physic-chemical study parameters are density, high fatty acids, iodic number, percentage of water in oil, the oil color, saponification in oil, phosphatides, number of peroxides; and microbial study parameters are the total number of living mesophilic bacteria, the total number of fungi and the presence of salmonella in vegetable oil. The results obtained are characteristic of the unrefined oil and vegetable oil.

**Keywords:** Vegetable oil, unrefined oil, physic-chemical parameters, microbial parameters

# Production of Fly ash/Chitosan composites aimed for heavy metal adsorbents

Egzona Osmani, Iva Dimitrievska, Perica Paunovic, Anita Grozdanov  
Faculty of Technology and Metallurgy, University Ss Cyril and Methodius in Skopje,  
Rugjer Boskovic 16, 1000 Skopje, Macedonia  
egzono1996@gmail.com

**Abstract.** The processes of generation, management, treatment and disposal of fly ash industrial waste particles all over the world have been considered as serious issues of solid waste. The subject of this research work was to produce and to characterize the Fly ash/Chitosan composites aimed for heavy metal adsorption in polluted waters. Three different types of fly ash waste particles were used, two types supplied from EURONICKEL and one supplied from OSLOMEJ, Macedonia. The surface of the fly ash (FA) particles was modified by treated with nitric acid ( $\text{HNO}_3$ ). Several types of composite adsorbents were produced using the chitosan as a polymer matrix. The characterization of the metallurgical waste particles was performed by XRF, XRD, TGA, SEM and FTIR analysis, while the obtained composites were tested by TGA, SEM and FTIR analysis. It was observed that the structure, morphology, and some other characteristics of FA particles have been significantly changed after treatment with chitosan and it is expected that it will improve their adsorption capacity of heavy metal ions.

**Keywords:** Fly ash, Chitosan, Composites, Production, Characterization



# Grapevine Pinot gris virus (GPGV) Infection of a Southern Hungarian Vineyard

Réka Sáray<sup>1,2</sup>, Erzsébet Szathmáry<sup>3</sup>, Dóra Pinczés<sup>1,2</sup>, Asztéria Almási<sup>1</sup>, Katalin Salánki<sup>1</sup> and László Palkovics<sup>4,5\*</sup>

<sup>1</sup>Department of Plant Pathology, Plant Protection Institute, Centre for Agricultural Research, Eötvös Loránd Research Network, Budapest, Hungary

<sup>2</sup>Doctoral School of Horticultural Sciences, Hungarian University of Agriculture and Life Sciences, Budapest, Hungary

<sup>3</sup>Department of Plant Pathology, Hungarian University of Agriculture and Life Sciences, Budapest, Hungary

<sup>4</sup>ELKH-SZE PhatoPlant-Lab, Széchenyi István University, Mosonmagyaróvár, Hungary

<sup>5</sup>Department of Plant Sciences, Albert Kázmér Faculty of Mosonmagyaróvár, Széchenyi István University, Mosonmagyaróvár, Hungary

palkovics.laszlo.amand@sze.hu

**Abstract.** Plant viruses are perhaps the most difficult group of plant pathogens to combat. To date, nearly 90 viral pathogens of grapes have been identified in the world, but their number is constantly increasing. Grapevine Pinot gris virus (GPGV) is a member of the *Trichovirus* genus of the *Betaflexiviridae* family. The virus was first described in Trentino, Italy, in 2012, from the 'Pinot gris' grape variety, from which it got its name. It is spread all over the world where grapes are grown it has been reported in 58 countries on five continents. It has a flexible filament-shaped particle, typical of the family, and a single-stranded positive RNA genome, which encodes three ORFs. GPGV can be spread by grafting, infected propagating material, and its suspected vector is the grape erineum mite, *Colomerus vitis*. The presence of the pathogen is associated with Grapevine Leaf Mottling and Deformation (GLMD), but in many cases it causes a latent infection. In the summer of 2021, a total of 100 leaf sample were collected from a vineyard in southern Hungary, from different traditional and innovative grape varieties, from symptomatic and asymptomatic grapevines. We tested the samples for GPGV infection using serological (ELISA) and molecular (RT-PCR) methods. Loop-mediated isothermal amplification (LAMP) based method was developed on the detection of the virus. Using ELISA, RT-PCR and LAMP methods 92, 94 and 100% of the samples were found to be positive respectively.

**Keywords:** Grapevine Pinot, Infection, Vineyard.

# Urban waste management and economic benefits from them – Case study Mitrovica Region

Besa Veseli, Veton Haziri, Shqiprim Ahmeti

Institution of Higher Education, UBT-College, Agriculture, Food Science and  
Technology

besa.veseli@ubt-uni.net

**Abstract.** Elimination of urban waste is a vital link in the beginning-end concept of urban waste management. Waste volumes are projected to grow continuously as far as relevant institutions and other actors will not take actions to solve this problem. The total amount of these waste is increasing each year. On the other hand; the current emphasis on pollution prevention as well as the development of treatment technologies results in the reduction of urban waste volume. Waste prevention will be a key element of an integrated policy. In this regard, strong measures are needed to encourage reuse, reduce and recycle of waste, which is also called "waste hierarchy". Waste Integrated Management is a comprehensive system which requires the application of landfill technologies or incineration. This study aims to identify and present the current situation of waste management in the city of Mitrovica. It also aims to create a model in selecting the method of urban waste management that can be implemented in the Municipality of Mitrovica using the Cost- Benefit Analyze as a major criterion of evaluation.

**Key words:** Waste Management; Recycling; Environment; Landfill; Cost-Benefit Analyzes

# Application of mathematical models for predicting the content of trihalomethanes in the drinking water of the city of Struga

Bujar H. Durmishi<sup>1\*</sup>, Arbana Durmishi<sup>1</sup>, Pajtim Bytyçi<sup>2</sup>, Arianit A. Reka<sup>1</sup>, Agim Shabani<sup>1</sup>

<sup>1</sup>Department of Chemistry, Faculty of Natural Sciences and Mathematics, University of Tetova, Str. Ilindeni n.n., 1200 Tetova, Republic of North Macedonia

<sup>2</sup>Food Science and Biotechnology, UBT-Higher Education Institution, Republic of Kosova

bujar.durmishi@unite.edu.mk

**Abstract:** Trihalomethanes (THMs) as the main disinfection byproducts created when chlorine reacts with organic matter of the drinking water. THMs in high concentrations are harmful and can be carcinogenic for the liver, pancreas, nervous system, development organs, whereas in women can cause miscarriage. Therefore, THMs recently have concerned very much the scientific and public opinion. Consequently THMs must be constantly monitored. THMs mainly are determined by the gas chromatography method, which is a difficult procedure and very costly. To avoid this, in the past years is practiced the use of mathematical models for prediction of THMs in drinking water. By fast measuring of the values of some simple parameters of drinking water quality and with replacing them in the mathematical models we can predict the THMs content. The aim of this article was the prediction of the THMs content in drinking water in the city of Struga for the spring 20121 in three sampling points S1, S2 and S3. Measured parameters and their average values with standard deviation were: water temperature ( $13.56 \pm 1.17$  °C), residual chlorine ( $0.20 \pm 0.00$  mg/L), pH ( $7.58 \pm 0.03$ ), electrical conductivity ( $250.89 \pm 9.37$   $\mu$ S/cm), chemical oxygen demand ( $1.53 \pm 0.06$  mg/L), total dissolved solids, ( $407.67 \pm 2.89$  mg/L) and chlorides ( $5.26 \pm 0.32$  mg/L), respectively. These values are then placed in mathematical models and with calculation is predicted the THMs content in drinking water. For prediction were used ten mathematical models and the average value of the THMs with standard deviation was  $16.61 \pm 6.04$   $\mu$ g/L). From the results we can conclude that the used models for THMs prediction has resulted successful and this content of THMs pose no risk to public health.

**Keywords:** THMs, physico-chemical parameters, drinking water, mathematical models for prediction, health

# Comparison of some quality and safety (microbiological) parameters of water as a raw material for the production of non-alcoholic beverages

Ardit Hoti\*, Agon Aliu, Namik Durmishi

UBT Higher Education Institution, Lagjja Kalabria p.n., Prishtinë, Kosovë

[ah38835@ubt-uni.net](mailto:ah38835@ubt-uni.net)

**Abstract.** Water represents the most important ingredient during the production of soft drinks. In non-alcoholic beverages, water takes part 86-94%, of the final production. Water intended for the production of non-alcoholic beverages, in addition to quality characteristics, must also meet bacteriological safety. For this, the main purpose of the research is to analyse some qualitative and bacteriological safety parameters of untreated and treated water and the obtained result will show the same as meeting the criteria for water destined for the production of non-alcoholic beverages based on recipe requirements. Water samples were taken at the water plant before treatment, and after treatment, where the following physical and chemical parameters were analysed: pH scale, electrical conductivity, alkalinity, water hardness, total chlorine, and some bacteriological parameters were also analysed, such as total bacteria and coliforms. The obtained results of the physical, chemical, and bacteriological analyses are compared with the standards of waters intended as auxiliary raw material in the production process of non-alcoholic beverages.

**Keywords:** water, analysis, physical, chemical, bacteriological, chlorination, standards.

# Determination of heavy metals in drinking water in the region of Prishtina using ICP-MS

Veton Haziri\*, Arianeta Nura, Besa Veseli, Guxim Gacaferi  
UBT Higher Education Institution, Lagja Kalabria p.n., Prishtina, Kosova  
veton.haziri@ubt-uni.net

**Abstract.** The purpose of this research was to study the presence of heavy metals in the drinking water network in the region of Prishtina. For the realization of this study, nine samples were analyzing at four sampling points with a total of thirty-nine samples. The tested parameters were heavy metals, non-essential metals such as: aluminum, lead, mercury, cadmium, arsenic, selenium, and antimony. The parameters were tested by standard method EPA6020A, with ICP-MS equipment. Due to the developments in industry, food and non-food technology, pollution with heavy metals is increasingly threatening. It's known that some metals are essential for the proper functioning of living organisms, while others are non-essential. Heavy metals are those whose exposure is chemically undesirable and poses a potential risk. The obtained results have shown that the tested parameters are within the reference values, and there is no water pollution with toxic metals.

**Key words:** Heavy metals, pollution, drinking water

# Collection of medicinal and aromatic plants in the municipality of suhareka

Shkëlzim Ukaj, Hyzer Rizani\*, Smajl Rizani

UBT Higher Education Institution, Lagjja Kalabria p.n., Prishtina, Kosova

[hyzer.rizani@ubt-uni.net](mailto:hyzer.rizani@ubt-uni.net)

**Abstract.** Medicinal plants have been and are the object of research for centuries by naturalists, biologists, doctors, pharmacists and nutritionists. Depending on the geographical position and living conditions, plants find their own habitat to live. Medicinal plants are collected in several areas of the Republic of Kosovo. We have chosen the territory of the municipality of Suhareka for research on which aromatic medicinal plants are collected and by whom? The researched area includes the hilly-mountainous areas where the continental climate dominates with the influence of the Mediterranean climate. The purpose of the paper is based on two objectives: a) to identify which plants are collected for export and b) which plants are collected for the personal needs of citizens. The plants most sought after by collectors are from the genera: Primulla, Origano, Hipericum, Juniperus, Tilia, Malus, Vaccinium, Robus, etc.

**Keywords:** Primula, naturalist, export, oregano, collector

# The influence of demographic factors on consumer perception regarding the safety of food packaging materials

Saimir Dinaj\*, Violeta Lajqi-Makolli

UBT - Higher Education Institution, Lagjja Kalabria p.n., Prishtina, Kosova

saimir.dinaj@gmail.com

**Abstract.** The purpose of this paper is to show the impact of packaging elements, specifically packaging materials, on the perception of consumers on the safety of food products based on their experience. This paper aims to show the influence of demographic factors such as: age, gender, education and monthly income on consumer perception of the safety of food packaging materials. This was achieved using a structured questionnaire using the SPSS program to analyze the results obtained from the questionnaire. Data were obtained from the responses of 231 respondents from a closed questionnaire. For data analysis, was used the SPSS program, where the dependent variable will be the packaging material, while the independent variables will be age, gender monthly income and education.

**Keywords:** Food package, packaging material, food safety

**First record of *Acanthocephalus lucii* (Müller, 1776) Lühe, 1911 (Paleacanthocephala: Echinorhynchidae) in minnow (*Phoxinus phoxinus* Linnaeus, 1758) from Belčišta wetland, N. Macedonia**

Stojmir Stojanovski<sup>1\*</sup>, Dijana Blazhekovikj-Dimovska<sup>2</sup>, Lidija Velkova-Jordanovska<sup>1</sup>, Vasil Kostov<sup>3</sup>, Irina Manevska<sup>3</sup>, Julijana Arsovska<sup>4</sup>

<sup>1</sup>Hydrobiological Institute, "NaumOhridski" 50, 6000 Ohrid, N. Macedonia;

<sup>2</sup>University "St. Kliment Ohridski", Faculty of Biotechnical Sciences, "Partizanska" b.b. 7000 Bitola, N. Macedonia;

<sup>3</sup>University "St. Cyril and Methodius", Skopje, Institute of Animal Sciences

<sup>4</sup>University "St. Cyril and Methodius", Skopje, Faculty of Natural Sciences and Mathematics, Institute of Biology

[stojstoi@gmail.com](mailto:stojstoi@gmail.com)

**Abstract.** The representatives of the phylum Acanthocephala are of great importance in fish pathology. *Acanthocephalus lucii* (Müller, 1776) Lühe, 1911 (Paleacanthocephala: Echinorhynchidae) is a common pathogenic acanthocephalan parasite in many freshwater predatory fish or those that feed on large benthos, in Euroasia. In our study, a total of 33 specimens of 3 cyprinid fish from Belčišta wetland (southwest N. Macedonia) were subjected to a parasitological investigation, by seasons. Only fresh fish were subjected to routine identification, dissection, and observation methods. Parasite identification was performed morphologically, based on the character of proboscis with hooks and the reproductive system, using referent key for determination. One specimen of *Acanthocephalus lucii* was found in autumn, in intestines of minnow (*Phoxinus phoxinus* Linnaeus, 1758). This parasite species would lead to impairing of fish health status. The record of *Acanthocephalus lucii* in minnow in the present study is considered as the first in N. Macedonia. At the same time, minnow represents a new host for this parasite worldwide. This emphasizes the danger of the spread of parasites through stocking with newly introduced fish species.

**Keywords:** *Acanthocephalus lucii*, minnow, Belčišta wetland, first record



# Health Benefits and Applications of Red Berries in Functional Food Products Development

Hyrije Koraqi

UBT-Higher Education Institution, Prishtina, KOSOVO

**Abstract.** The abundance of very useful bioactive substances found in red berry fruits, which have the potential to have a favorable impact on human health, makes them a popular food throughout the world. Red berries have a long history of use in various cultures as food and medicine due to their nutritional content. Red berries have gained popularity over the past 20 years and are now used as a functional food since they contain a variety of bioactive substances that have positive effects on health. Additionally, as a source of functional compounds with potential industrial applications, they are drawing more study attention. The antioxidant qualities of red berries, scientific proof of their health effects based on human interventional research, safety issues, red berry processing methods, and uses of red berry-based ingredients in creating functional food items are the main topics of this mini-review.

**Keywords:** Red berries; bioactive compounds; antioxidant properties; health benefits; food product development

# Biodegradation of Azo Dyes

Osman Fetoshi<sup>1</sup>, Rozeta Hasalliu<sup>2</sup>, Endra Luzha<sup>3</sup>, Lorikë Salihu<sup>3</sup>, Pajtim Bytyçi<sup>3\*</sup>

<sup>1</sup>Department of Biology, Faculty of Arts and Sciences, Niğde Ömer Halisdemir University, 51240, Niğde, Turkey

<sup>2</sup>Agricultural University of Tirana, Koder Kamez, 1012, Tirane, Albania

<sup>3</sup>Faculty of Food Science and Biotechnology, University for Business and Technology, 10000 Prishtina, Kosova

[pajtim.bytyqi@hotmail.com](mailto:pajtim.bytyqi@hotmail.com)

**Abstract.** Synthetic dyes are widely used in textile, dyeing, paper, printing, color photography, pharmaceutical, food, cosmetics, and other industries. Azo dyes represent about one-half of all the dyes in common use and are employed as coloring agents in the textile, food, and pharmaceutical industries. Although these are not toxic, but after released into the aquatic environments, they can be converted into carcinogenic amines. Chemical and physical methods including adsorption, coagulation-flocculation, advanced oxidation and electrochemical methods are very efficient in color removal. These methods are quite expensive and have operational problems; high sludge formation, regeneration requirement and cost of adsorbent make adsorption an unattractive method for decolorization purposes. Nowadays the attention is focused on the treatment of azo dyes with biological methods due to these methods are ecofriendly and cost-effectiveness. Azo dye biodegradation by several mixed and monoculture bacterial cultures, aerobic and anaerobic culture, white root fungi, algae, plants have been reported.

**Keyword:** Azo dyes, Bacteria, Fungi, aromatic amines, monoculture

# The Ukraine war and food insecurity in Kosovo

Emine Daci Zejnullahi\*, Elmedina Bajgora

UBT- Higher Education Institution, Lagjja Kalabria p.n.10 000 Pristina, Republic of Kosovo

[emine.daci@ubt-uni.net](mailto:emine.daci@ubt-uni.net)

**Abstract.** Food inflation, Growth in population, reduction of land surfaces, global warming, natural and health disasters (COVID-19), and world crises have affected food security concerns. Inflation in the area of agricultural and food products as an important macroeconomic indicator was affected as a result of the pandemic, so inflation began to increase at the beginning of 2021, marking unfavorable rates during this year, and continues to increase rapidly during the year 2022 as a result of the war in Ukraine. This paper is focused on the study of the impact of war in Ukraina on inflation in the agriculture and food sector. The paper was based on a descriptive analysis of technical documents, papers, journals, and reports of main international organizations dealing with related issues and other important partners. During this two-year period, agriculture and food products experienced a very large increase in inflation in Kosovo, reaching higher figures compared to other countries. Populations in Kosovo spend more than half of their family budget on food, so the increase the food prices has directly affected their well-being, having a negative impact on the country and beyond. The annual inflation rate measured from July 2021 to July 2022 reached 14.2% for food and agricultural products. The last published data on inflation was significantly higher than expected. Global and local inflation rates continue to rise, faster than expected. Therefore, the peak of the increase in prices of agricultural and food products is visible. The prices of locally produced products are also continuing as a result of the increase in the prices of raw materials, agricultural inputs (fertilizers, pesticides, machinery, fuels, etc.), climate stress, export bans, etc

**Keywords:** Inflation, food, war in Ukraina, economic cost, agriculture inputs, food security.

# Microbial and physico-chemical quality of MIROSI bottled water

Arianeta Nura\*, Luljeta Ajdini, Veton Haziri, Emine Daci Zejnullahu, Aurora Grainca  
UBT Higher Education Institution, Lagjja Kalabria p.n., Prishtina, Kosova

[arianeta.nura@ubt-uni.net](mailto:arianeta.nura@ubt-uni.net)

**Abstract.** Bottled water consumption is increasing more and more, so it is important to be monitored the quality of bottled water. The current paper contains data on the microbial and physicochemical quality of natural mineral water, produced by the MIROSI water industry. The standard water testing methods were used to assess the microbiological and physicochemical quality of bottled water. During the sampling period, 645 samples were taken at four sampling points, before and after UV treatment. Quality is monitored by determining microbiological and physico-chemical parameters such as: total coliforms, total microflora at 37°C, pH, temperature, conductivity, total hardness, calcium, magnesium, chloride and KMnO<sub>4</sub>. The results showed that the mean concentrations of physicochemical parameters were within the reference values of ISO standards for these parameters. Microbiological analyses indicated that water samples taken from water tank and bottled water containers 10 L, before UV treatment, had mean values of total microflora at 37°C 3.2 – 3.9 CFU/ml and mean values for total coliforms 0 CFU/ml. It is therefore recommended to regularly monitor bottled water quality, before and after production to fulfil the basic water quality standards EN ISO/IEC 17025:2018.

**Keywords:** Bottled water, total microflora at 37°C, total coliforms.

# Assessment of Current Situation in Waste Management Generated from Albanian Agri-food Industry

Ariola Devolli<sup>1</sup>, Edlira Shahinasi<sup>1</sup>, Merita Stafasani<sup>1</sup>

<sup>1</sup>Department of Chemistry, Faculty of Biotechnology and Food, Agricultural University of Tirana, Pajsi Vodica, Kodër-Kamëz, 1029 Tirana, Albania

adevolli@ubt.edu.al

**Abstract.** Food industry generates huge amount of wastes in liquid and solid form which lead to a negative environmental impact if they are not managed in a proper way. This study is focused on the assessment of current situation related to the management of waste generated by agri-food industries and producers' awareness for cleaner production, as a strategy to reduce environmental risk. The information for this study is provided by the interviews with 54 different food industries. Some questions addressed to the industries consist on the production capacity, types of waste, management disposal, packaging materials etc. This, data provided by different types of industries show that milk processing and dairy products occupy 28% of the interviews, followed by olive oil production and distillery and winery with 24% and 20% respectively. The main packaging material they use is plastic (45%) plastic, cardboard (25%), glass (19%) and cans (11%). Regarding to waste management, major part of producers have noticed that they take some precautions in solid waste management, meanwhile some distilleries and breweries apply pretreatment of wastewater before discharge it into public wastewater or other receiving water systems. Major part of olive oil industries due to strengthen of environmental legislation pre-collect vegetation water in septic tanks. However, the treatment of active sludge, which is considered harmful for aquatic environments and toxic for soil and vegetation, still remains a problem. Therefore, application of clean technology, reduction and treatment of wastes and wastewaters are considered essential for food industry waste management.

**Keywords:** Food Industry, Waste Management, Wastewater Pretreatment, Environmental Risk.

# Surface water pollution from food activities in the course of Lumbardhi

Sami Gashi, Shkëlzim Ukaj\*, Fadil Kryeziu, Vehebi Sofiu, Riad Morina  
University for Business and Technology, Calabria 65, Prishtina, Kosovo  
shkelzim.ukaj@ubt-uni.net

**Abstract.** This research, based on some physical-chemical parameters, shows whether the surface waters are polluted by the discharges of food industries in the Prizren area. We analyzed eight samples in the months of June 2021 and 2022 in accordance with the standards of the Hydrometeorological Institute of Kosovo. Water samples were collected at the source of the Lumbardhi stream as a reference point and during its course one sample before entering the city of Prizren and one sample after leaving the city (rural area, urban area) and the fourth sample before the discharge into the Drini river White. Our research is based on several parameters, the values of which indicate whether the surface waters in the Lumbardhi river of Prizren are polluted by the discharge waters that are generated by the different food production industries that develop their activity in this area. From the results obtained in our study, we noticed that the water taken at the first sampling site L1 in the source was clean for both years in the same time period, while the other samples that we analyzed had significant changes at points L2, L3 and L4 especially parameters such as: Biological need for Oxygen, Chemical Oxygen Demand, Concentrations of Total Suspended Materials, Ammonium Ion, Nitrates and Nitrites. Almost all pollutant parameters had higher values, in the third sample (L3) taken in the urban area in June 2021, compared to the pollutant parameters in June 2022. In some parameters, there were also excesses of the allowed values.

**Keywords:** MTS (Suspended Dissolved Materials), COD (Chemical Oxygen Demand), BOD<sub>5</sub> (Biological Oxygen Demand), NO<sub>3</sub> (Nitrates), NO<sub>2</sub> (Nitrites)

# Genealogical analysis of left-handed feature with stutter

Hyzer Rizani<sup>1</sup>, Naser Kamberi<sup>1\*</sup>, Festim Kamberi<sup>2</sup>, Shkelzim Ukaj<sup>1</sup>, Magbule Rizani<sup>1</sup>, Berat Durmishi<sup>1</sup>, Smajl Rizani<sup>1</sup>

<sup>1</sup>University of Business and Technology - Pristina- R. of Kosovo.

<sup>2</sup>International Balkan University-Skopje. R. of Macedonia.

naser.kamberi@ubt-uni.net

**Abstract:** The research of the linkage to these two genetic features was carried out in a sample of the population in the Presevo municipality, which included two villages Rahovica and Zhunica. This sample of the population includes 3771 individuals. During the interviews with the families with left hand and stutters we came to three cases where the two features were interconnecting. Doing the genealogical analyse of these families we will represent the corelation of these features. Like many other illneses which are connected with morphological features or with blood groups alltogether these features are seen as linked up. Therefore, in this study in genealogical way we will represent the cases for these genetical features. It has to be mentioned that in one family we have a case of the illness hemophilia which in this case is linked with these two features involved in the study.

**Keywords:** Corelation, left hand, stutter

# The Potential Impact of Some of the Clarifying Agents and Laboratory Filter Paper in Reducing the Concentration of Fe, Cu and Zn in Water

Valon Durguti\*, Fisnik Laha, Elmë Sadiku, Argjentë Thaçi

University of Business and Technology (UBT), Department of Food Sciences and Biotechnology, Lagjja Kalabria p.n.10 000 Prishtina, Republic of Kosovo

[fnisnik.laha@ubt-uni.net](mailto:fnisnik.laha@ubt-uni.net)

**Abstract.** The term heavy metal refers to any metallic chemical element that has a relatively high density and is toxic or poisonous at low concentrations. Heavy metals pose a great risk to human health due to the ability of bioaccumulation in different tissues. Their toxicity depends on several factors including dose, route of exposure and chemical element, as well as the age, sex, genetics, and nutritional status of exposed individuals. The purpose of the research was to analyze the action (impact) of some of the so-called clarifying agents and laboratory filter paper in the potential reduction of some of the heavy metals (Fe, Cu and Zn) in water. The analytical technique that we have used was the technique known as "Flame Atomic Absorption Spectroscopy - FAAS" and the research was carried out in the research laboratories of UBT. The clarifying agents used were: gelatin, PVPP and casein. A satisfactory reduction of the concentration of heavy metals in water under the influence of clarifying agents, especially gelatin and laboratory filter paper, has been observed.

**Keywords:** Heavy Metals, Gelatin, PVPP, Casein, Filter Paper, FAAS



# Design, Synthesis, DFT Calculation, and Antimicrobial Activity of Novel Substituted Thiazole Derivatives

Demokrat Nuha<sup>1,2,3</sup>, Asaf Evrim Evren<sup>3,4</sup>, Meral Yılmaz Cankılıç<sup>5</sup>, Leyla Yurttas<sup>3</sup>

<sup>1</sup> Faculty of Pharmacy, University of Business and Technology, Pristina, Kosovo

<sup>2</sup> Eskişehir Technical University, Faculty of Science, Department of Chemistry, 26555, Eskişehir, Turkey

<sup>3</sup> Anadolu University, Faculty of Pharmacy, Department of Pharmaceutical Chemistry, 26470, Eskişehir, Turkey

<sup>4</sup> Vocational School of Health Services, Bilecik Seyh Edebali University, 11230, Bilecik, Turkey

<sup>5</sup> Eskişehir Technical University, Faculty of Science, Department of Biology, 26555, Eskişehir, Turkey

demokrat.nuha@ubt-uni.net

**Abstract.** The emergence of antimicrobial medication resistance has become a global concern. Some, if not all, antimicrobial medicines used in clinics are expected to be phased out of treatment procedures in the near future. As a result, researchers are focusing more on the creation of novel antimicrobial medications. We devised and manufactured novel substituted-thiazole derivative chemicals based on 6-acetyl penicillanic acid for this aim (6-APA). The compounds structures were determined using <sup>1</sup>H-NMR, <sup>13</sup>C-NMR, and LC/MS-IT-TOF spectroscopy. Targeted molecules were synthesized in two steps utilizing traditional Hantzsch thiazole synthesis. All chemicals were tested on eleven bacteria and sixteen fungi species to establish the minimum inhibitory concentration (MIC). Compounds 3d, 3f, and 3g with thiazole, 5-nitrobenzimidazole, and triazole rings, respectively, showed strong antibacterial activity against the majority of the strains tested. Density function theory was used to compute the molecular properties, electronic and chemical reactivity descriptors, and electronic dipole moment of selected compounds. Geometry was optimized using the hybrid functional and basis set: B3LYP/6-31G (d, p). All of the substances under consideration are chemically reactive, according to our calculations.

**Keywords:** Thiazole, Antibacterial Activity, Antifungal Activity, DFT, Chemical Reactivity Properties, ADME.

# Identification of physiological diseases of vegetables in the Solanaceae family

Mufail Salihaj<sup>1\*</sup>, Diellon Salihaj<sup>2</sup>

<sup>1</sup> UBT- Higher Education Institution, Lagjja Kalabria p.n.Pristina, Republic of Kosovo,

<sup>2</sup> Faculty of Biotechnical Sciences, Bitola, North Macedonia

mufail.salihaj@ubt-uni.net

diellon.salihaj@uklo-edu.mk

**Abstract** – Disorders of the physiological functions of plants, as a result of climatic factors, lack or excess of nutritional elements, often present a problem in the diagnosis of plant pathologies in general. Such disorders are known as physiological diseases, which in the agronomic aspect cause a significant loss of yield. In our study, we focused on the monitoring and diagnosis of these diseases in crops of the Solanaceae family (tomatoes, peppers, potatoes, eggplant). The study was done for 2 vegetations in a row. From this study, we diagnosed many physiological deformations as the results of the influence of environmental factors, sampling plant parts, leaves and fruits with suspicious symptoms of pathological disease, which in reality were physiological disorders that brought double economic damage. On the one hand, the use of unnecessary fungicides, increasing the economic damage even more, and on the other hand, endangering food security, for cause of eventual residues. All this as a consequence of the wrong diagnosis, alluding to pathological diseases. To identify these diseases, we sampled the parts of the plants where the symptoms appeared. In all those cases where we did not manage to make the diagnosis through symptoms, then we sent such samples to the laboratory and through the microscopic method we identified physiological diseases from pathological ones.

**Key words:** Diagnosis, study, disease, symptoms, fungicide

# Assessment of some macro and micro Elements in drinking water in the republic of kosovo

Mustafa Metehiu , Fiden Feka \*, Drita Zogaj, Suzana Aliu

Food Science and Biotechnology, UBT-Higher Education Institution, Kalabria, str.  
Rexhep Krasniqi Nr. 56, Prishtina 10000, Kosovo

fidan.feka@ubt-uni.net

**Abstract.** The aim of this study was to evaluate the concentration of some macroelements including Sodium, Potassium, Magnesium and Calcium (Na, K, Mg & Ca) and microelements including Cadmium, Arsenic, Lead, Zinc (Cd, Cr, Mo, Pb and Zn) etc., in drinking water samples in the regions of the Republic of Kosovo. The water sampling sites consist of the following localities: Mitrovicë, Drenas, Deçan, Gilan-Kamenica and Pejë, a total of 6 (six sampling sites). The analysis of drinking water samples was carried out according to the EPA 6020A method (inductively coupled plasma - mass spectrometry), where the sensitivity of this analytical technique is quite high. The obtained results show that the examined samples of drinking water according to the data for macro and micro trace elements vary as: Na(1240.11-3108505 µg/L), K(298.824-4315.097 µg/L), Ca(32398.925- 90623.047 µg /L), Cu(4.836-18.753 µg/L), Zn(0.482-15.506 µg/L), Cd(0.00-0.898 µg/L), Pb(0.00 µg/L), Hg(0.00 µg/L), As(0.00-1.412 µg/L), Ag(0.00 µg/L) and Sb(0.00 µg/L). The obtained results show us that the level of concentrations of macro and micro elements analyzed in the Republic of Kosovo will not exceed the reference values. The implementation of the practical work was carried out near the laboratories of the National Institute of Public Health and the UBT College.

**Keywords:** Drinking water, Macro and Micro elements, Inductively coupled plasma - mass spectrometer.

# An Alternative Way to Manage Waste Cooking Oils for Biodiesel Production

Armela Mazrreku<sup>1</sup>, Basanja Shtylla<sup>1</sup>, Jonilda Llupa<sup>1</sup>, Ilirjan Malollari<sup>2</sup>, Marilda Osmani<sup>1</sup>, Belinda Hoxha<sup>1</sup>

1,4,5 Department of Chemistry, University of Elbasan, Albania

2 Department of Agrifood, Fan S Noli University, Korce Albania

Department of Chemistry, University of Ioannina, Greece

3 Department of Industrial Chemistry, University of Tirana, Albania

[armelamazreku@hotmail.com](mailto:armelamazreku@hotmail.com)

**Abstract.** Biodiesel is a promising alternative energy solution to meet the need for sustainable sources of clean energy. Biodiesel has proven to be the best substitute for fossil oil due to its unique properties such as: low toxicity, no sulfur emissions, no particulate pollution, significant reduction in greenhouse gas emissions and biodegradability. Biodiesel production can be the solution to the problem of how to deal with waste cooking oils (WCO) and the associated problem of environmental contamination. Every year, tones of WCO are poured into toilets and drains, contaminating water supplies and creating serious problems in waste water treatment plants. WCO is a waste material that can be used to produce biodiesel. The main aim of this study is to determine how the type of WCO (and how much it has been used) affect the quality of the biodiesel obtained. Several processes for the production of biodiesel have been developed, among which transesterification using alkaline catalysis gives high levels of conversion of triglycerides to their corresponding methyl esters in short reaction times. Used cooking oils are used as raw materials, adaptation of continuous transesterification process and recovery of high-quality glycerol from biodiesel by-products (glycerin) are the main options to be considered to reduce the cost of biodiesel. There are four main ways to make biodiesel, direct use and blending, micro emulsions, thermal cracking (pyrolysis) and transesterification. The most common method is transesterification of vegetable oils and animal fats. The transesterification reaction is affected by the molar ratio of glycerides to alcohol, catalysts, reaction temperature, reaction time, and the free fatty acids and water content of the oils or fats. The mechanism and kinetics of transesterification show how the reaction occurs and progresses

# A review on intelligent food packaging as innovation strategies for the future

V. Lajqi Makolli<sup>1\*</sup>, I. Malollari<sup>2</sup>, S. Dinaj<sup>1</sup>

<sup>1</sup>UBT Higher Education Institution, Prishtina, Kosova

<sup>2</sup>Faculty of Natural Sciences, University of Tirana, Albania

violeta.lajqi@ubt-uni.net

**Abstract.** Food packaging is an integral part of the food industry associated with food quality and safety including food shelf life, and communications from the marketing perspective. Food safety is a major factor affecting public health. Therefore, nowadays based on consumer requirements are developed new methods to produce innovative food packaging which protects the food quality and monitors food products during their shelf life. The purpose of this paper is to review the latest trends in the development of innovative packaging for food quality monitoring as a way to inform consumers about food quality and to reduce food loss, avoid food poisoning and consumer satisfaction can be optimized. One of the innovative food packaging is Intelligent packaging which contains an external or internal indicator that monitored the conditions of packaged foods and gives information to users about the food quality during their storage and transport and also informs consumers when the package has been tampered. The innovative technology discussed here holds great potential for applications in food packaging and brings us one step closer to enabling real-time monitoring of food throughout the supply chain. Substances used to monitor food quality like sensors, biosensors, other indicators, may be in contact with food, and must be authorized in the context of food legislation, and may be used only within the authorized limits.

**Keywords:** smart packaging, innovative packaging, food quality, real-time monitoring, sensors, biosensors.

# Determination of the quality of local and imported honey bees in Kosovo

Berat Durmishi<sup>2,1</sup> Ibrahim Mehmeti<sup>1\*</sup>, Smajl Rizani<sup>1</sup>, Valon Sadiku<sup>1</sup>, Hyzer Rizani<sup>1</sup>, Vesna Knights<sup>2</sup>

<sup>1</sup>UBT - Higher Education Institution, Lagjja Kalabria p.n., Prishtina, Kosova

<sup>2</sup>Faculty of Technology and Technical Sciences - Veles, University "St. Kliment Ohridski" - Bitola, Dimitar Vlahov, 1400 Veles, Macedonia

[ibrahim.mehmeti@ubt-uni.net](mailto:ibrahim.mehmeti@ubt-uni.net)

**Abstract.** . Honey is a natural product that contains a large number of substances and nutrients that has potential health benefits. The nutritional values of honey differ based on the different regions where the bees are fed. We analyzed honey samples originated from four different countries imported and saled in Kosovo markets. Different physico-chemical parameters are analysed such as: moisture content, brix value, pH, electrical conductivity, free acidity, proteins, ash residues insoluble and some heavy metals (copper (Cu), zinc (Zn), manganese (Mn), iron (Fe), chromium (Cr), arsenic (As), lead (Pb) and cadium (Cd)). The result shows significant difference between samples. The moisture values of all analyzed honey samples were below 20%, which is the maximum value allowed by Council Directive 2001/110/EC. The free acidity level of sample is different between countries. The same differences we see also between markets and local products. The pH values has significant different between samples variant from 3.74 until 5.18. The difference can be explained due to the quality of product, different contents of heavy metals of microflora of many brands are different.

**Keywords:** Honey, quality level, physico-chemical parameters and heavy metals.

# Traditional cereal-based products in the Peja region

Sonita Mavraj<sup>1</sup>, Nazmi Hasanaj<sup>2</sup>, Kastriot Pehlivani<sup>1</sup>, Emine Daci<sup>1</sup>, Flutura C. Ajazi<sup>1\*</sup>

<sup>1</sup>Department of Food Science and Biotechnology, UBT – Higher Education Institution, Prishtina, Kosovo

<sup>2</sup>University “Haxhi Zeka”, Faculty of Agribusiness, Pejë, Kosovo

flutura.ajazi@ubt-uni.net

**Abstract.** Traditional cereal-based foods are some of the most popular and consumed traditional foods within and between Kosovo residents and visitors. These food products have an old history of production and consumption and have been passed from one generation to the next in our country, which is young as a state but with a very old tradition. This study aimed to evaluate the diversity of traditional cereal-based products that are produced in Peja region. Informations for this study were carried out by local restaurants and from families that produce food for their own consumption and for sale on a small scale in Rugova region. Our investigation for this study is focused on the diversity of cereal-based products and the ingredients of these products. Among several cereal-based products, produced and consumed in Rugova region, three of them were dominant such as Fli, Leqenik and Pogaçe. The production method and the types of ingredients added to these products were the same between different manufacturers. This is the first study to report the diversity and ingredients of traditional cereal-based products in Kosovo. Further investigation is needed to know more about physico-chemical and microbiological characterization of these products.

**Keywords:** Cereal-based products, traditional food, diversity, Rugova

# The effects of grafted seedlings on yield and fruit quality of cucumber (*Cucumis sativum L.*) under common greenhouse conditions

Smajl Rizani<sup>1</sup>, Ismet Babaj<sup>1</sup>, Berat Durmishi<sup>1</sup>

<sup>1</sup>UBT Higher Education Institution, Lagjja Kalabria p.n., Prishtina, Kosova

[Ismet.babaj@ubt-uni.net](mailto:Ismet.babaj@ubt-uni.net)

**Abstract.** The study's objective was to evaluate grafted seedlings' effects on cucumber yield and fruit quality (*Cucumis sativum L.*) under common greenhouse conditions. The experiment was carried out at a farmer's greenhouse in Stanovc, Vushtri municipality of Kosovo. Grafted seedlings (GS) in two different rootstocks (*Cucurbita fucifolia* and *Sprinter*) and non-grafted seedlings (NG) were applied for the gherkin cultivar Centuar F1. The effects of grafted seedlings on yield and fruit quality were estimated under common greenhouse conditions. The results of the experimental data revealed that the application of the grafted seedlings (GS) recorded significantly the highest yield, more number of leaves per plant, number of fruits, and highest fruit yield. No significant differences exist between the two applied cucumber rootstocks on fruit quality and harvested fruits.

**Keywords:** *Gherkins*, rootstock, grafting, seedlings, fruit quality



# The impact of grafted seedlings on yield and fruit quality of pepper Somborka cultivar (*Capsicum annuum L.*) under common open field conditions

Ismet Babaj<sup>1</sup>, Berat Durmishi<sup>1\*</sup>, Naim Krasniqi<sup>1</sup>

<sup>1</sup>UBT Higher Education Institution, Lagjja Kalabria p.n., Prishtina, Kosova

[berat.durmishi@ubt-uni.net](mailto:berat.durmishi@ubt-uni.net)

**Abstract.** The study's objective was to evaluate grafted seedlings' effects on yield and fruit quality of pepper (*Capsicum annuum L.*), Somborka cultivar under common open field conditions. The experiment was carried out at a farmer's field in Llausha, Skenderaj municipality of Kosovo. Pepper grafted seedlings (GS) in two different rootstocks (Rokal and Fortama F1) and non-grafted seedlings (NG) were applied for the pepper cultivar Somborka. The effects of grafted seedlings on yield, the number of fruits, mesocarp thickness, and fruit weight were estimated under common open field conditions. The results of the experimental data revealed that the application of the grafted seedlings (GS) recorded significantly the highest yield, more number of fruits per plant, and the thickness of the mesocarp was higher compared with non-grafted (NG). No significant differences exist between the two applied pepper rootstocks on estimated parameters.

**Keywords:** Peppers, grafting, yield, mesocarp, non-grafted

# The influence of sodium chloride concentration on the determination of gluten in flour by the standard manual method

**Fisnik Laha\*, Vesa Zeqiri**

University of Business and Technology (UBT), Department of Food Sciences and Biotechnology, Lagja Kalabria p.n.10 000 Prishtina, Republic of Kosovo

[fisnik.laha@ubt-uni.net](mailto:fisnik.laha@ubt-uni.net)

**Abstract.** Gluten is a family of storage proteins—formally known as prolamins—that occur naturally in certain cereal grains, such as wheat, barley, and rye. Many different prolamins fall under the umbrella of gluten, but they can be further classified based on the specific grains in which they are found. Gluten provides a variety of functional culinary benefits and is responsible for the soft, chewy texture that is characteristic of many gluten-containing grain-based foods. For the purpose of determination the wet gluten in flour the ISO 21415-1 principles are applied in testing procedure. ISO 21415-1 specifies a manual washing out method for the determination of the wet gluten content of wheat flour. Wet gluten is a visco-elastic substance, composed principally of two protein fractions (gliadin and glutenin) in a hydrated form, obtained as specified in this standard. Dough is prepared from a sample of flour and a solution of sodium chloride. The dough is left to rest for the gluten structure to develop. The wet gluten is separated by hand washing the dough with sodium chloride solution, followed by removal of excess washing solution. The residue is weighted after prepared and analyzed the dough with different sodium chloride concentration.

**Keywords:** Wheat and Wheat Flour, Wet Gluten, Semolina, Sodium Chloride, Potassium Iodine

# Chemical composition of eggs for consumption from laying hens raised in two different breeding systems

Xhavit Bytyçi<sup>1\*</sup>, Rinor Krasniqi<sup>1</sup>, Valon Sadiku<sup>2</sup>

<sup>1</sup>University for Business and Technology-UBT; Prishtinë, Republic of Kosovo

<sup>2</sup>Agricultural Institute of Kosovo, Pejë, Republic of Kosovo

[xhavit.bytyci@ubt-uni.net](mailto:xhavit.bytyci@ubt-uni.net);

**Abstract.** To study the influence on the chemical composition of eggs from hens breeding in two breeding systems: the intensive system in cages and in the extensive system in yards, 54 samples of hens' eggs were analyzed from 18 different farms from both systems in the Peja Region in Kosovo. Eggs were analyzed for chemical components such as water, total nitrogen, protein, fat, energy and ash content. It turned out that egg samples from free home breeding have higher values of chemical components than egg samples from industrial breeding in protein (13.83% vs. 12.93%), total nitrogen (2.21% vs. 2.07%), fat (14.13% vs. 8.87%), energy (186.7 Kcal against 134.84 Kcal) and ash (0.98% against 0.88%). It seems that the changes in the content of chemical components in the researched egg samples were influenced by breeding, environmental, climatic, stressful and nutritional factors, which are different in the two breeding systems of hens for eggs, especially in the winter period when the study was carried out.

**Keywords:** Chickens; breeding; eggs; chemical composition;

# Evaluation of five blueberry varieties cultivated in fruit- growing region Junik - Western Kosovo

Maxhun Shehaj<sup>1\*</sup>, Erzen Shehaj<sup>1</sup>, Elbasan Çekaj<sup>1</sup>

<sup>1</sup>College UBT – Higher Education Institution, Lagjja Kalabria, 10000 Prishtinë

[maxhun.shehaj@ubt-uni.net](mailto:maxhun.shehaj@ubt-uni.net)

**Abstract.** For 6 years in a row, the vegetative and production characteristics of 5 North American blueberry cultivars have been evaluated in the Junik area in a randomized complete block with four replicates of each cultivar and five bushes per replication. Vegetative and fruit traits were evaluated for the Duke, Draper, Legacy, Bluecrop and Huron varieties in the experiment. The data have been statistically processed and tabulated. Based on the level of appearance of the features, the scheme based on the International Blueberry descriptor (UPOV), has been drawn. Duke is earlier variety in fruit set and harvesting. Huron stands out with fruit firmness, while Duke stands out with higher Titratable acidity. Draper gave the highest yield of the 5 varieties in the experiment. Bluecrop has lower fruit firmness. Despite the genetic features, each cultivar in certain agro-ecological conditions shows certain levels of production characteristics that determine their economic value. Therefore, the introduction of new crops/species in areas where they have not been cultivated before represents a challenge for the production community. The purpose of this experiment was to determine the degree of adaptability of these varieties in the Junik area. Based on results from the experiment are made recommendations.

**Keywords:** Blueberry varieties, Junik region, Adaptability of blueberry crop.

# 11<sup>th</sup> International Conference

## Chapter: Pharmaceutical and Natural Sciences

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# Functional and statistical characteristics of vitamin D in the creation and performance of the human body

Ajlin Abdullahu<sup>1</sup>, Miribane Dërmaku-Sopjani<sup>1</sup> and Arleta Rifati-Nixha<sup>1</sup>

<sup>1</sup>Chemistry Department, Faculty of Mathematical & Natyral Scieces, University of Prishtia, Prishtina, 10000, Republic of Kosovo

[arleta.rifati@uni-pr.edu](mailto:arleta.rifati@uni-pr.edu)

**Abstract.** The role that vitamin D plays in human health is no longer hidden in this modern era, where every individual carries the treasure of knowledge in their pocket (internet), but the unreasonable lack or insufficiency is still a research question waiting to be answered by the research community in the whole world. Calcium homeostasis and bone metabolism are known to depend on vitamin D. Additionally, it significantly affects skeletal muscle directly. Unlike authentic vitamins, which cannot be synthesized in the body, vitamin D is produced in the skin using sunlight. Supplementing with vitamin D has been found in various studies to improve patient care and health. A portion of the population appears to benefit in terms of strength, resistance to injury, and athletic performance from vitamin D. It is widely acknowledged that normal levels (30-50 ng/mL) of 25 OH-vitamin D are necessary for tooth and bone development in children and bone mineralization in adults. Deficiency or deficiency causes rickets, osteoporosis and osteomalacia. Clinical and epidemiological research will be the primary topics of this paper. The first study was done to identify the food sources, food habits, and use of supplements of female workers in a factory where primary data was collected through interviews using a questionnaire and blood biochemistry analysis (serum 25 (OH) D). The serum 25(OH)D level determines vitamin D status. The next study was done to find the correlation between the levels of vitamin D and the results of death from COVID-19 as a result of the insufficient amount of this vitamin.

**Keywords:** Vitamin D, Athletic performance, COVID-19, Supplementation, Clinical research, Deficiency.

# Utilization of antidiabetic medicines in Republic of Kosova

Arianit Jakupi<sup>1</sup>, Shpend Dragusha<sup>1</sup>, Valon Ejupi<sup>1</sup>, Agon Hoti<sup>1</sup>, Demush Bajraktari<sup>1</sup>, Bujar Qazimi<sup>1</sup>, Eda Mehmeti<sup>1</sup>

<sup>1</sup>UBT-Higher Education Institution, Faculty of Pharmacy, Lagjja Kalabria p.n., 10000 Pristina, Kosovo

[arianit.jakupi@ubt-uni.net](mailto:arianit.jakupi@ubt-uni.net)

**Abstract.** Diabetes is a common disease among the Kosovo population, and in cases where chronic patients experience comorbidities, it can be severe and fatal. In the last three years, some new medicines have been registered in Kosovo Medicines Agency for the treatment of diabetes (oral medicines and new analog insulins) that aim the better outcomes for the treatment of the patients. This study aims to analyze the drug utilization of antidiabetic medicines in Kosovo and compare the pre-pandemics utilization and with that in other countries. Another objective is to compare the essential medicines list revision of 2019 and the consumption trend due to the changes on the new list. The methodology of drug consumption is based on the WHO ATC/DDD system, with results shown in DDD/inhabitant/day (DID). Preliminary results show that Kosovo is also moving with new medicines, but with much slower budget possibilities and a lack of health insurance. The introduction of analog insulins in the essential medicines list and obtaining marketing authorization for some other new oral antidiabetics have open possibilities for patients to access these medicines. However, data show a need for the intervention of clinical pharmacists in the medication review for more rational use of antidiabetic medicines.

**Keywords:** Antidiabetic medicines, Essential Medicines, DDD, DID; Drug Consumption

# The importance of patient compliance with medicines storage recommendations

Arlinda Haxhiu Zajmi<sup>1</sup>, Edita Alili Idrizi<sup>1</sup>, Lulzime Ballazhi<sup>1</sup>, Drita Havziu<sup>1</sup>, Dorentina Bexheti<sup>1</sup>, Merita Dauti<sup>1</sup>, Sihana Ahmeti Lika<sup>1</sup>

<sup>1</sup>Department of Pharmacy, Faculty of Medical Sciences, University of North Macedonia

[arlinda.haxhiu@unite.edu.mk](mailto:arlinda.haxhiu@unite.edu.mk)

**Abstract.** Proper storage and handling of medicines throughout the distribution chain to the consumer/patient is an important process that affects the quality of medicines as a prerequisite for the effectiveness and safety of medicines. The patient, as the user, the end in that chain, has a very important role, because every person usually stores in their home medicines for the treatment of certain diseases or incidental use. All medicines should be stored in compliance with the storage recommendations/instructions that are determined by the manufacturing drug company, marked on the medicine packaging, and on the patient information leaflet. Non-compliance and non-implementation of these recommendations cause significant changes in the quality of the medicines, which may result in decreased efficiency or problems with the safety of the medicines. Therefore, the purpose of this paper is to analyze the importance of patient compliance with medicines storage recommendations and the consequences of non-compliance with them.

**Keywords:** medicines, storage recommendations, patient compliance, quality



# The Distribution of Minerals in Crucial Parts of Mountain tea (*Sideritis scardica* Griseb.)

Bujar Qazimi<sup>1\*</sup>, Trajče Stafilov<sup>2</sup>, Katerina Bačeva-Andonovska<sup>3</sup>, Krsto Tašev<sup>4</sup>, Shpend Dragusha<sup>1</sup>, Hyrije Koraqi<sup>1</sup>, Arianit Jakupi<sup>1</sup>, Valon Ejupi<sup>1</sup>

<sup>1</sup>Faculty of Pharmacy, UBT- Higher Education Institution, Lagjia Kalabria, 10000 Prishtina, Fvioleta  
Republic of Kosovo

<sup>2</sup>Institute of Chemistry, Faculty of Natural Sciences and Mathematics, University Ss. Cyril and Methodius, 1000 Skopje, North Macedonia

<sup>3</sup>Research Center for Environment and Materials, Macedonian Academy of Sciences and Arts, Bul. Krste Misirkov 2, 1000 Skopje, North Macedonia

<sup>4</sup>State Phytosanitary Laboratory, Bul. Aleksandar Makedonski bb, 1000 Skopje, North Macedonia

[bujar.qazimi@ubt-uni.net](mailto:bujar.qazimi@ubt-uni.net)

**Abstract.** The aim of this study was the determination of mineral content in spontaneous flowering stems and rosette leaves of mountain tea (*Sideritis scardica* Griseb.) collected in four different localities in North Macedonia. The plant material was air-dried, packed in paper bags, and kept in a dark and cold place until analysis. Samples were digested in a microwave system by the wet digestion method. The minerals were determined by the application of inductively coupled plasma–atomic emission spectrometry (ICP-AES) and inductively coupled plasma–mass spectrometry (ICP-MS). The rosette leaves exhibit a very similar mineral content profile to the flowering stems of *S. scardica*, and accordingly can be recommended as a plant material of this endemic aromatic plant.

**Keywords:** *Sideritis scardica*, mineral content, ICP-AES, ICP-MS

# Nutritional values and statistical characteristics of soybeans and its products in the functioning of the human body

Dafina Hoti<sup>1</sup>, Miribane Dërmaku-Sopjani<sup>1</sup> and Arleta Rifati-Nixha<sup>1</sup>

<sup>1</sup>Chemistry Department, Faculty of Mathematical & Natural Sciences, University of Prishtina, Prishtina, 10000, Republic of Kosova

[arleta.rifati@uni-pr.edu](mailto:arleta.rifati@uni-pr.edu)

**Abstract.** Soy foods have long been recognized as sources of high-quality protein and healthy fats, but over the past 25 years these foods have been diligently investigated for their role in prevention and treatment of chronic diseases. So much focus on soy foods is because they are unique sources of isoflavones. Isoflavones are classified as phytoestrogens and as selective modulators of estrogen receptors. However, the many benefits we get from isoflavones with their presence in soy has led to concerns that it can have anti-inflammatory effects in individuals. However, these concerns are based primarily on studies that have been done in animals, while human research supports the safety and benefits of soy. In this paper we will focus mainly on clinical research and epidemiological. Studies in mice are in limited value for predicting effects in humans due to the many physiological and anatomical differences between rodents and humans. In the case of soy, most animals and rodents metabolize isoflavones very differently. However, some commercial soy products isolated from soybeans such as soy milk, soy powder as commonly used for babies and many other products, are analysed for their content of Ph, acidity, proteins, fats, phosphorus and some metal ions (calcium, copper, iron, potassium and zinc). The changes found in the content of proteins, phosphorus and metal ions in these products depends on the procedures used to produce soy derivatives.

**Keywords:** Soy foods, Isoflavones, Clinical research, Proteins, Healthy fats.

# Assays for Determining the Antioxidant Activity of willow bark of *Salix alba*

Demush Bajraktari<sup>1</sup>; Biljana Bauer<sup>2</sup>; Lulzim Zeneli<sup>3</sup>

<sup>1</sup>Faculty of Pharmacy, UBT Higher Education Institution, Lagjja Kalabria, p.n. 10000 Prishtine, Kosovo

<sup>2</sup>Faculty of Pharmacy, Ss. Cyril and Methodius, University of Skopje, "Majka Tereza" No. 47, 1000, Skopje, North Macedonia

<sup>3</sup>Faculty of Education, University "Fehmi Agani", Str. "Ismail Qemali", n.n., 5000, Gjakova, Kosovo

[demush.bajraktari@ubt-uni.net](mailto:demush.bajraktari@ubt-uni.net)

**Abstract.** Plants are subject of exposure to a variety of stressors in the natural world, all of which contribute to the overproduction of reactive oxygen species. Antioxidants are natural path of defending cells from reactive oxygen species and inhibits the oxidation of other molecules. To determine the antioxidant capacity, in recent decades many different methods have been developed. Based on the mode of action, two groups of antioxidant assays are identified: hydrogen atom transfer (HAT) and single electron transfer (SET) assays. Antioxidant activity of willow bark extracts of *Salix alba* along the river stream of Sitnica, in highly polluted region of Kosovo Thermal Power Plants were investigated by three methods: CUPRAC, FRAP, DPPH. Ferric Reducing/Antioxidant Power (FRAP) method (ferric-reducing ability) - measures potential of antioxidant to reduce ferric iron and it is presented as new method for evaluation of antioxidant capacity. Cupric reducing antioxidant capacity – [(Cu (II) reduction to Cu (I)], is uncomplicated method and extensively relevant analysis of antioxidant capacity beneficial for a broad class of polyphenols. DPPH (2,2 - diphenyl-1-picrylhydrazyl) - method measures the ability of antioxidants by spectrophotometer to reduce 2,2- diphenyl -1- picrylhydrazyl and is one of the oldest non-direct assay for antioxidant activity determination. With the above methods, the following results were obtained during the research of antioxidant activity of willow bark of *Salix alba*: FRAP from 89.61  $\mu\text{mol Fe}^{2+}/\text{g DW}$  to 504.36  $\mu\text{mol Fe}^{2+}/\text{g DW}$ ; CUPRAC results ranged from 92.927  $\mu\text{mol trolox/g DW}$  to 454.651  $\mu\text{mol trolox/g DW}$ ; DPPH scavenging activity ranged from 31.28  $\mu\text{mol trolox/g DW}$  to 164.26  $\mu\text{mol trolox/g DW}$ . Antioxidant activity decreased in the following order: FRAP > CUPRAC > DPPH. The results in this study indicate that the examined willow bark samples of *Salix alba* have exemplary antioxidant activity.

**Keywords:** assay, FRAP, CUPRAC, DPPH, willow bark

# Evaluation of statin users in cardiology and oncology

Diellza Tahiri<sup>1</sup>, Armond Daci<sup>1</sup>, Endrit Ibishi<sup>2</sup>

<sup>1</sup>Department of Medical Science, Faculty of Pharmacy, UBT College, Prishtina, Kosovo

<sup>1</sup>Department of Pharmacy- University of Prishtina

<sup>2</sup>Clinic of Anesthesiology and Intensive Care-University Clinical Center of Kosovo

[diellza.tahiri@ubt-uni.net](mailto:diellza.tahiri@ubt-uni.net)

**Abstract.** Administration of 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitors, also known as statins, to ambulatory and hospital patients is linked with a decreased incidence of long-term adverse cardiovascular events such as myocardial infarction, stroke, atrial fibrillation, and renal failure. However, increasing clinical evidence suggests that statins, independent of their effects on serum cholesterol levels, may also play a potential role in the prevention and treatment of cancer. In particular, it has been demonstrated in multiple studies that statins offer a number of advantageous anti-cancer effects, such as a reduction in metastasis, angiogenesis, and tumor development. However other research support as risk factor for cancer incidence. Our main goal was to assess statin users on oncology using their identification and use of different types of cancer and statin identification in cancer patients, duration of their use, their impact on cancer incidence, and action their anticancer drugs to the most prevalent cancers for the time of monitoring. The research is based on interviewing patients at the Clinic of Oncology at University Clinical Center of Kosovo. with a questionnaire where we interviewed a total of 196 patients, 176 of whom were outpatients and 20 patients were hospitalized. Where then the collected data from patients are transferred to a database created in the Excel program where from there all the data are presented in the form of tables and graphs. Out of 196 patients divided into 4 different groups, with dominant breast cancer with 66 patients, then cervical cancer with 53 patients, lung cancer with 40 patients and 37 patients with prostate cancer. Out of the 196 patients, 53 of them have been statin users. All results are presented in tabular form and graphs. By five hypotheses derived from our results as well as comparing our results with other scientific studies made by experts in this field, we found matching and contradictions with other studies. From our results as well as from many other researched results we can state that statins can be an additional drug for breast, cervical and lung cancer but on the other hand they have not shown positive results in prostate cancer patients. However, this kind of study does not yet have a concrete conclusion.

**Keywords:** Statins, HMG-CoA inhibitors, cancer, breast cancer, prostate cancer, lung cancer, cervical cancer.

# Synthesis of biodiesel from waste cooking oil via transesterification

Edlira Riza<sup>1</sup>, Miribane Dërmaku-Sopjani<sup>1</sup>, Osman Hasku<sup>2</sup> and Arleta Rifati-Nixha<sup>1\*</sup>

<sup>1</sup>Chemistry Department, Faculty of Mathematical & Natural Sciences, University of Prishtina, Prishtina, 10000, Republic of Kosova

<sup>2</sup>”Trepfarm” pharmaceutical manufacturer in Kosovo

[arleta.rifati@uni-pr.edu](mailto:arleta.rifati@uni-pr.edu)

**Abstract.** Biodiesel is an alternative fuel made from byproducts of the meat and vegetable industries, such as soybean oil and chicken fat. Alternately referred to as fatty acid methyl ester, biodiesel can also be made from algae and similar organic materials. During the production stages, the oils or fats undergo a transesterification process where the ingredients are purified, but not stripped of oxygen. The aim of this paper is that instead of dispose fried oil in environment, we collect, process and convert it into biodiesel that has many benefits such as: less toxic, emits less greenhouse gases. So it brings economic and ecological benefits to the environment. We have been able to synthesize biodiesel through transesterification reaction. First we made the titration of the oil with KOH 0.1% to know how much base we should use. After doing the calculations, we used waste cooking oil, methanol and NaOH. The oil was heated to 70°C, we add sodium methoxide and stirred for 45 minutes. After stirring, we let to sit in separate funnel for 24 hours. After 24 hours we saw two layers, which bottom layer was crude glycerol and upper layer was biodiesel. We've rinsed it with water twice until all the impurities are clear out and added magnezium sulphate to absorbs the water. Results obtained showed that the waste cooking oil have viscosity, free fatty acid, acid value, flash point, cloud point, density, boiling point, biodiesel reaction efficiency, no amount of water and IR spectra.

**Keyword:** biodiesel, transesterification, renewable source.

# Role of Vitamin D in Children Diagnosed with Asthma

Emir Behluli<sup>1</sup>, Lidvana Spahiu<sup>1</sup>, Gazmend Temaj<sup>2</sup>

<sup>1</sup> Department of Pediatrics, University of Prishtina, Prishtina, Kosovo

<sup>2</sup> Department of Pharmacy, College UBT, Prishtina, Kosovo

[ebehluli\\_19@hotmail.com](mailto:ebehluli_19@hotmail.com)

**Abstract.** The vitamin D play pivotal role in children development, deficiency of vitamin D in pediatric children appeared to influence in skeletal development and immunity system. This paper show significance of vitamin D in airways system and genetic inheritance between children. Also, we have described influence of vitamin D between different race and gender in different people of the world.

**Keywords:** Vitamin D, Asthma, Immune system

# Prescribed and non-prescribed use of tranquilizers or sedatives amongst adolescents in Tetovo, North Macedonia

Erda Aliu<sup>1</sup>, Nexhibe Nuhiu<sup>2</sup>, Bajram Kamberi<sup>3</sup>, Donjeta Abazi<sup>4</sup>

<sup>1</sup>Department of Medicine, Faculty of Medical Sciences, University of Tetova

<sup>2</sup>Department of Pharmacy, Faculty of Medical Sciences, University of Tetova

<sup>3</sup>Department of Neurology, Faculty of Medical Sciences, University of Tetova

<sup>4</sup>Department of Medicine, Faculty of Medical Sciences, University of Tetova

[alierda@gmail.com](mailto:alierda@gmail.com)

**Abstract.** Part of this study were 217 respondents from Tetovo, North Macedonia. The study was based on a multiplechoice questionnaire where the respondents were asked to choose the most reasonable answer. 8% of the participants have consumed prescribed tranquilizers or sedatives. The most prescribed were Vitamin B6 by 46% and Diazepam by 33%, when prescribed: 67% have used them as dosed and scheduled by the doctor, 12% have used them according to their personal needs and 21% haven't taken them despite being prescribed. 23% of respondents have used nonprescribed tranquilizers or sedatives. The majority used them due to stress, anxiety and depression 62%. The most commonly used tranquilizer or sedative was Helex, Xanax (Alprazolam) by 37%, approximately 71% of participants dosed and scheduled them based on the information they obtained online, the rest used them according to their needs.

**Keywords:** Tranquilizers, sedatives, prescribed, non-prescribed, adolescents.

# API fingerprinting using discriminatory analytical and chemometric techniques – a useful tool for authentication of API samples

Gentiana Mehmeti <sup>1</sup>, Gentrída Mehmeti <sup>2</sup>, Ahmet Hoxha <sup>3</sup>, Bujar Qazimi <sup>4</sup>, Jelena Acevska <sup>1</sup>

<sup>1</sup>Institute of Applied Chemistry and Pharmaceutical Analysis, Faculty of Pharmacy,  
University Ss. Cyril and Methodius, Skopje, North Macedonia

<sup>2</sup>Dompé Pharmaceutical Company, Prishtina, Kosovo

<sup>3</sup>Trepharm Pharmaceutical Manufacturing, Prishtina, Kosovo

<sup>4</sup>UBT-Higher Education Institution, Faculty of Pharmacy, Lagjja Kalabria, p.n. 10000  
Prishtina, Kosovo

<sup>1</sup>Institute of Applied Chemistry and Pharmaceutical Analysis, Faculty of Pharmacy,  
University Ss. Cyril and Methodius, Skopje, North Macedonia

[genta89m@gmail.com](mailto:genta89m@gmail.com)

**Abstract.** An API (Active pharmaceutical ingredient) fingerprint is a specific analytical profile that can reveal information on manufacturing and distribution history of the substance based of characteristic physicochemical properties. Determining fingerprints can allow differentiation between samples by origin (manufacturer or location), verification of suspicious samples, and successful detection of counterfeit medicines. The aim of the research was to develop and apply analytical and statistical methodology for API fingerprinting that would allow their authentication and prevent falsification. We will evaluate different chemical APIs, starting with the most common analytical techniques (such as related substances with HPLC, solvent residue by GC, information from FTIR spectra), following by evaluation of the obtained data using chemometrics (pattern recognition techniques) to be able to differentiate the origin of the API based on 'unique analytical features' (i.e. fingerprints). If simple techniques are not enough to distinguish between samples, we will run the analysis using more powerful techniques such as Raman spectroscopy, NIR (near infrared spectroscopy) and possibly XRD (X-ray diffraction). Test results will be processed by comprehensive statistics methods (chemometric). The results from fingerprinting are expected to help API characterization, improving methods for quality control, distinguishing between samples, identifying the source (origin) of the substance, detecting counterfeiting.

**Keywords:** Active pharmaceutical ingredient fingerprinting, Pattern recognition techniques, Chemometrics



# The resistive switching in the anodized Nb-Ta library system

Ivana Zrinski<sup>1</sup>, Achim Walter Hassel<sup>1</sup>, Andrei Ionut Mardare<sup>1</sup>

<sup>1</sup>Institute of Chemical Technology of Inorganic Materials, Johannes Kepler University  
Linz, Altenberger Str. 69, 4040, Linz, Austria

[ivana.zrinski@jku.at](mailto:ivana.zrinski@jku.at)

**Abstract.** Conventional memory technology has reached its limits concerning power consumption, scalability, and processing speed. The reason behind these issues is the so-called von Neuman bottleneck in which the architecture of the machines is based on separated memory and processing units. For this reason, the memristive device can be an excellent replacement for conventional memories since they are in-memory computing systems. Memristors as a non-volatile type of memory which can be further applied for neuromorphic applications, ReRAM memories, or sensing applications. In this study, metal-insulator-metal (MIM) structured memristive devices were grown anodically on pre-oxidized Si wafers. Valve metals such as Nb and Ta have been used as bottom electrodes, while their oxidized forms played a role of an insulating layers with Pt patterned as top electrodes. Niobium and Ta oxides have already shown promising memristive switching characteristics. In order to improve the performance of such devices, Nb and Ta were mixed. In this way, the Nb-Ta library was produced. Niobium-tantalum system contains high number of alloys with a compositional spread ranging from 13 at.% Ta to 78 at.% Ta. Finally, high-performance Nb-Ta anodic memristors were identified, while their switching mechanism was studied using TEM and XPS. Conclusively, these devices may broaden their application range either as selector devices and ReRAM memories.

**Keywords:** memristive devices, Valve metals, Niobium and Ta oxides.

# Cerebrospinal Fluid Proteomic Characterization in Major Depressive Disorder

Liridon Muqaku<sup>1</sup>

<sup>1</sup>Faculty of Pharmacy, UBT - Higher Education Institution

[liridon.muqaku@ubt-uni.net](mailto:liridon.muqaku@ubt-uni.net)

**Abstract.** Major depressive disorder (MDD) is a highly prevalent and increasing disease, characterized by low mood, anhedonia, sadness, and guilt. Despite its heterogeneity, neither a biomarker nor a biosignature has been introduced to clinical practice, which would ensure greater diagnostic and prognostic accuracy. The review of the available literature reveals an increase in the number of studies being conducted to better understand the pathophysiologic mechanisms of MDD, as well as the urgent need to develop diagnostic biomarkers. Several molecules are discussed as promising indicators of depressive conditions, that are involved in different processes such as inflammation, structural and transportation molecules, and synaptic transmission. However, to confirm their diagnostic and prognostic value, additional large-scale studies and the application of cutting-edge analytical techniques are required.

**Keywords:** major depressive disorder, proteomics, CSF, biomarker.

# Innovation in Pharmacy Education

Luciano Saso<sup>1</sup>

<sup>1</sup>Faculty of Pharmacy and Medicine Sapienza University of Rome College of Medicine,  
Italy

**Abstract.** Health professions education is changing rapidly in most countries, and the recent digital push resulting from the COVID-19 pandemic is accelerating the process. Simulation, augmented reality, machine learning, artificial intelligence, digitalization, and big data are taking on increasing importance. Ethics, intercultural, and communication training also are critical in health professions education to advance high-level performance in the new global and digital society. The Association of Academic Health Centers International (AAHCI) recently launched a series of webinars on “Innovation in Health Professions Education”<sup>1</sup> to highlight these important points.

**Keywords:** Innovation, education, health, Covid-19.

# The ribosome modification! To modify or to die?

Nexhibe Nuhii<sup>1</sup>, Jehona Xheladini<sup>1</sup>, Arjeta Shabani<sup>1</sup>, Gjylai Alija<sup>1</sup>, Sefedin Bilalli<sup>1</sup>, Gazmend Temaj<sup>2</sup>

<sup>1</sup>State University of Tetovo, Faculty of Medical Sciences, Department of Pharmacy, Tetovo, North Macedonia.

<sup>2</sup>Human Genetics, College UBT, Faculty of Pharmacy Prishtina, Kosovo.

[nexhibe.nuhii@unite.edu.mk](mailto:nexhibe.nuhii@unite.edu.mk)

**Abstract.** Normal and malignant cell growth is determinate by the synthesis of rRNA. RNAs it is possibility chemically to modified in different ways. First is thought that this modification is static, but lastly is revealed that some modification it is possibility to be reversed. This reversed process it is possibility to play pivotal role in different cell biological processes in all three kingdoms of life. In eukaryotes exist different form of protein post-translational modifications (PTMs), including phosphorylation, poly(ADP-ribosyl)ation, ubiquitylation, pseudouridylation, sumoylation, methylation, acetylation and others, and in this form is regulate protein stability, localization and activity without the need for changes in de novo protein synthesis. The energy which is required for RNA modification also is very higher. Here we report form some modification such as SUMOylation and Methylation.

**Keywords:** Methylation., Sumolyation, rRNA., tRNA., Ribosomal protein

# Synthesis and characterization of some carbazole bearing pyridopyrimidine-substituted imine derivatives

Rina Krasniqi<sup>1,2</sup>, Arleta Rifati-Nixha<sup>1</sup>, Mustafa Arslan<sup>3</sup>, Miribane Dërmaku-Sopjani<sup>1</sup>

<sup>1</sup>Chemistry Department, Faculty of Mathematical; Natural Sciences, University of Prishtina, Prishtina,

10000, Republic of Kosova

<sup>2</sup> Pharmacy Department, UBT College – Higher Education Institution, Prishtina, 10000, Republic of Kosova

<sup>3</sup>Chemistry Department, Faculty of Arts and Sciences, Sakarya University, Sakarya, 54147, Turkey

[rina.krasniqi@ubt-uni.net](mailto:rina.krasniqi@ubt-uni.net)

**Abstract.** Heterocyclic compounds especially nitrogen containing have great attention in the literature due to biological properties. Among the compounds, pyrimidine and pyridine-containing compounds have been the subject of expanding research efforts in organic and biological chemistry. In this study, we investigated prepared novel carbazole-containing pyridopyrimidine-substituted (**3a-c**) with benzaldehyde derivatives. The structures of the compounds synthesized were confirmed by <sup>1</sup>H NMR, <sup>13</sup>CNMR, FTIR and elemental analysis.

**Keywords:** carbazole, pyridopyrimidine, imine, benzaldehyde.

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# An update of reported potential side effects for selected drugs based on WHO pharmacovigilance database

Valon Ejupi<sup>1</sup>, Bujar Qazimi<sup>1</sup>, Arianit Jakupi<sup>1</sup>, Shpend Dragusha<sup>1</sup>

<sup>1</sup>UBT-Higher Education Institution, Faculty of Pharmacy, Lagjja Kalabria, p.n.  
10000 Prishtine, Kosovo

[valon.ejupi@ubt-uni.net](mailto:valon.ejupi@ubt-uni.net)

**Abstract.** Adverse reactions of drugs can decrease compliance and delay recovery. Therefore, it is crucial to consider potential side effects when choosing particular drugs. Analyzing the World Health Organization (WHO) pharmacovigilance database (Vigibase®), we collected Adverse Drug Reactions (ADRs) of selected drugs reported for decades. Common side effects of omeprazole are renal and urinary disorders (18%), gastrointestinal disorders (15%), nervous system disorders (7%), cardiac disorders (2%). For ranitidine, neoplasms benign, malignant and unspecified (73%), followed by skin and subcutaneous tissue disorders (4%), vascular disorders (1%) were among reported ADRs. Ramipril caused respiratory system and breast disorders (15%), nervous system disorders (10%), cardiac disorders (10%). Atenolol mostly is associated with cardiac disorders (13%) and psychiatric disorders (6%). Paracetamol side effects counts gastrointestinal disorders (10%) hepatobiliary disorders (5%), immune system disorders (2%). Nimesulide usage may cause blood and lymphatic system disorders (2%), cardiac disorders (2%), ear and labyrinth disorders (1%). For ketoprofene, potential side effects are skin and subcutaneous tissue disorders (31%), nervous system disorders (5%), eye disorders (4%). Even though there is no perfect drug that works quickly and completely free of adverse reaction, aim is to choose safer drugs, better tolerated, and associated with lower rate of noncompliance.

**Keywords:** Pharmacovigilance, drugs, adverse reaction, recovery.

# Incidence of oral diseases with microorganisms causing sexually transmitted diseases

Zafer Gashi<sup>1</sup>, Afrim Zeqiraj<sup>1</sup>, Shkelzen Elazaj<sup>2</sup>

<sup>1</sup>UBT College Prishtina, Kosovo.

<sup>2</sup>Regional Hospital, Peja Kosovo

[zafer.gashi@ubt-uni.net](mailto:zafer.gashi@ubt-uni.net)

**Abstract.** During oral-genital intercourse, especially if the contact is prolonged, oral and genital secretions can be transferred from one person to another. In this way, microorganisms that require very specific favorable conditions for reproduction and that would otherwise not be able to survive in less direct modes of transmission (eg *T. pallidum*, herpes simplex virus) can be successfully transmitted. After the discovery of the HIV virus, there is a great interest in the non-sexual mode of transmission of such infections. The main categories of sexually transmitted diseases of importance to the oral cavity are bacterial (including chlamydial), viral and fungal diseases. Considering the frequent manifestations in the oral cavity, interest in diseases such as syphilis, gonorrhea, herpes, hepatitis B and C and HIV. Using the literature published in this field, the authors prepare this paper to describe the etiology, the clinical overview of diseases caused by the transmission of infection during intimate contact between the oral cavity and genital organs. A comprehensive literature search using international literature from databases including PubMed, Embase, Web of Science, Scopus and the Cochrane Library. Oral manifestations of sexually transmitted diseases are rare or rarely encountered in specialized practice in a small country such as the Republic of Kosovo. Dentists are the first to see and diagnose venereal diseases of the mouth. Such a role would mean a change in the traditional activity model of the dentist, for which perhaps neither the dentist nor his patient is ready today, either for cultural reasons or because of the traditional perception of the dental profession. For the prevention of sexually transmitted diseases that enter the oral cavity, it is recommended that oral medicine specialists work as part of a multidisciplinary team, together with an infectious disease specialist, dermatovenerologist, urologist, gynecologist and microbiologist, to establish the diagnosis of correctly and treating the patient.

**Keywords:** STD, gonorrhea, syphilis, chlamydia, HIV, hepatitis B, hepatitis C.

# 11<sup>th</sup> International Conference

## Chapter: Integrated Design

### IC-ID

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# StoryLab: A Case Study of Nonformal Learning Models for Interdisciplinarity and Multidisciplinarity with Focus on Arts, Design, Technology, and Creative Writing

Artrit Bytyçi,

MFA, University for Business and Technology, Prishtina, Kosovo,

[artrit.bytyci@ubt-uni.net](mailto:artrit.bytyci@ubt-uni.net)

**Abstract** This paper investigates the advantages of using nonformal education. Countries in transition are often faced with gaps in the formal education system, either be them public or private. For public educational institutions, these come from a variety of reasons, ranging from lack of funds, lag in the adoption of the latest teaching methods, poor management, overworked academic staff, adoption of wrong educational policies on the State level, etc. Private educational institutions, while being able to better solve some of the problems of the public institutions, they face their own challenges. Even though they are often better suited to change and modify their educational programs based on the needs of the students, they are often slowed down and hindered by bureaucracy, over-regulation, and inflexibility as a result of having to comply with various education regulatory and accreditation bodies, etc. In our paper, we propose an alternative in the form of nonformal learning models, which are applicable not only in countries in transition but also in those with long traditions of quality and innovation in education. We will focus namely on the case of StoryLab from Kosovo. Specific educational methods used by StoryLab will be discussed, and an overview of past, current, and upcoming projects and programs will be presented. Furthermore, some of the challenges this model faces will be explored. The role of independent arts and cultural institutions will be discussed, followed by the importance of integrating the offerings from the independent arts and culture scene into the existing traditional and formal educational institutions.

**Keywords:** art, design, education, technology, creative writing, students, education methods, nonformal education, independent art institutions, culture scene

# Inspiring Civic Action Through Utilization of Green Public Spaces: OnTop Gallery, A Case Study

Fatmir Mustafa – Karlo

MA, University for Business and Technology, Prishtina, Kosovo,

fatmir.mustafa@ubt-uni.net

Artrit Bytyçi, MFA, University for Business and Technology, Prishtina, Kosovo,

artrit.bytyci@ubt-

uni.net

**Abstract** This paper will focus on exploring the ways in which to inspire civic action through the utilization and occupation of green public spaces. It will specifically focus on the project entitled “On Top Gallery” created by artist Fatmir Mustafa - Karlo. “OnTop Gallery” is an extension of a greater project entitled “On Top Residency” which aims to raise awareness of the dwindling green public spaces. The rationale for choosing the location close in proximity to the “OnTop Residency’s” land lot 09136-0, in Butovc, (in the neighboring hill) will be discussed. We will present the concept and plans for the envisioned functioning of both of these open-air spaces. Furthermore, the kinds of possible artworks that could be displayed at the “OnTop” Gallery will be discussed. Special focus will be given to the collaborations of “OnTop” projects with other local and international arts and cultural institutions. Finally, we will focus on the ways in which civic action is increased through projects of public art.

**Keywords:** gallery, civic action, public spaces, green spaces, art, contemporary art, artistic occupation, nature, public art, open gallery, curation, artworks.

# **Introduction to aesthetic issues**

## **(with a special focus on the issue of the definition of art)**

Dr. sc. Bekim Sele

Fakulteti i Arteve – UBT, Rexhep Krasniqi 56, 10000 Prishtinë, Kosovë

E-mail: [bekim.sele@ubt-uni.net](mailto:bekim.sele@ubt-uni.net)

**Abstract** From the well-known classics to the authors of the XXI century, the reflection on the definition of art has been and continues to remain one of the most essential issues of its treatment and philosophical worldview. In general, the philosophy of art and its dialectic has given a great space to the treatment and definition of art, the way of their production, values and phenomena created by the very existence of art in general. In this paper we will unfold in a philosophical and aesthetic way the map of different ideas on the definition of art. With a special focus, the topic deals with and includes the most prominent views of the contemporary opinion of the three authors of the work "Esthetics Matters" who have chosen a completely different way of dealing with the definition of art and the artist in particular. These two notions - the second more than the first are already part of our social discourse because, not infrequently, the words art and artist are not understood correctly and are reserved exclusively for certain personalities, products and artistic activities.

**Key words:** Art, artist, aesthetics, dialectics, contemplation, etc

# Promoting Monuments of Prizren Throught Technology

Sebil Spat, Sinem Dana

UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë, Kosovo

sebil.spat@ubt-uni.net: sebil.spat90@gmail.com

Rruga Saracet, No; 13, Prizren, Kosovo

sinemdana@gmail.com : studio@norminterior.net

**Abstract.** Prizren as culture capital of Kosovo is the most attractive city of the region. Prizren has so many intellectual attractions as Short Film Festival “Dokufest”, Autostrada Biennale, Zambaku i Prizrenit ect, which ones has visitors from all over the world. It’s not coincidence that all this very essential organizations happen in Prizren. Prizren as it’s architecture and monumental values is very rich and attractive itself. This organizations help visitors to know Prizren values better. Unfortunately this organizations has limited time and mostly occur while summer. This study contains a project which purposes to fulfill the need of tourism with a practical work which has turned to theory. “Smart City Guide” called project is a project who is being prepared together with volunteers and learning while making is one of projects returns. In this study the “Smart City Guide” project solutions will be considered on a preferential basis. The process of making details which are monuments research, monument visits, monuments 3d drawings, monuments 3d printing process are going to be analyzed correctly. This study is going to give a smart solution for a traditional touristic problems while using technology.

**Keywords:** Prizren Monuments, Tourism, Technology, 3d Printing, QR Codes

# Mismatch between kindergarten furniture and children's body dimensions in the region of Ferizaj

Muharrem Sejdiu<sup>1</sup> Bujar Jashari<sup>2</sup> Lulzim Idrizi<sup>2</sup>

<sup>1</sup>UBT–Higher Education Institution, Lagija Kalabria, 10000 p.n. Prishtinë, Kosovo  
muharrem.sejdiu@ubt-uni.net

<sup>2</sup>University of Applied Sciences in Ferizaj-Republic of Kosovo  
bujar.jashari@ushaf.net, [lulzim.idrizi@ushaf.net](mailto:lulzim.idrizi@ushaf.net)

**Abstract** Furniture is among the oldest art objects that have been used by human society. Various factors such as lighting, acoustics, sitting and many other things are considered the main determinants of children's health and their successful education. Although people spend most of the time sitting in them, subjects still do not pay proper attention to their ergonomic aspects. Dimensional suitability and the use of the right materials in furniture increases concentration and makes the child more comfortable during their activities. The study is focused on the most sensitive level of society, "children", who are often subject to ergonomic problems during their stay in kindergartens. The data of the study were collected in public and private kindergartens in the region of Ferizaj. The results of the study are of interest to the whole society, and especially to professionals in this field.

**Key words:** Ergonomics, children, kindergarten, chair, furniture

# Storylab: Graphic Design in Interior Design

Rolad Asllani, Arbresha Hoxha  
UBT College, Prishtina,

**Abstract** In this study, we will analyze the interior spaces in which graphic design has a tremendous impact on changing the environment, be it a social, cultural, societal or even public environment. These premises can positively or negatively affect the development of activities or activities within it. Graphic design in the interior can also reflect a culture or a critical message of discontent towards a community. In this abstract, we will mainly talk about the impact of environmental graphic design in public, administrative and private environments, where we will analyze the importance of designing spaces and the socio-psychological impact on the development of activities. We will also mention the importance of the interior architect that he must have a close relationship with the graphic designer, and as a result of this relationship, the final product of the interaction of these two, will carry a conceptual message of the space that is designed by the interaction of two disciplines that are closely related to each other.

**Keyword:** A conceptual message of the space that is designed by the interaction of two disciplines Graphic design in the interior that are closely related to each other.

# Introducing systems thinking in undergraduate industrial design education

Serkan Bayraktarođlu

Istanbul University, Beyazit, 34452, Fatih/Istanbul Turkey

serkanbayraktaroglu@istanbul.edu.tr

**Abstract** In the mid-twentieth century, general systems theory and cybernetics influenced the development of numerous approaches, including systems thinking. As in other disciplines, systems thinking engaged in design processes during the design methods movement. Following to the rise of environmental concerns globally, especially studies on circular design education point out vital role of systems thinking along with design thinking for investigating environmental and technical interconnectedness of design decisions. In this study, systems thinking denotes the way of observing, analyzing, and intervening in the world as if it contains open, complex yet purposeful wholes. The research reviews the literature to highlight the evolution of systems thinking approaches in design and presents the case of the 'Systems Thinking' course aimed at introducing the topic to the first-year industrial design students at Kadir Has University in 2020. Twenty-one students worked in teams to identify a potential leverage point for systems associated with different everyday products assigned to each group. The results highlight the facilitative role of systems thinking in learning design research at an early stage of industrial design curriculum, and in identifying four orders of design as potential points to intervene in a system.

**Keywords:** Systems Thinking, Industrial Design Education, Design Thinking, Design Research

# Building a letter font

Kaltrina Veselaj Shllaku<sup>1</sup>

<sup>1</sup> UBT University for Business and Technology

Lagja Kalabria pn

Faculty of Integrated Design

10000 Prishtine, Republika e Kosoves

kaltrina.veselaj@ubt-uni.net

**Abstract.** The typography of the letters in different languages often does not match another because its arrangement suits a relevant language. With this aim, there is a need to adjust a suitable font for the Albanian language as well. The purpose and realization of this work are to present the creation of a font, with emphasis on its typography, including all letters, numbers, punctuation marks, et cetera. In addition, particular importance is given to the anatomy of the letters as well as the size and space.

**Keywords:** Typography, font, writing, letter



# Effects of Interior Design on User Emotions: An Exploratory Research

Ylber Limani<sup>1</sup>

, Adea Tuzi<sup>1</sup>

<sup>1</sup> UBT College, Prishtina,

ylber.limani, at37522 {@ubt-uni.net}

**Abstract.** In everyday life, people are affected by the reflection of emotions conveyed by living, working, or recreation space. Therefore, it can be assumed when interior design studios focus on designing the interior environment, they should be oriented and focused on the user's emotions and experience to define and change a particular space using design styles, design concepts, design techniques, and methods. The purpose of this research is to perceive the sights of the impact of interior design on the attitudes and emotions of the user/customer. The methodology used to carry out the research is related to the theoretical part including the review of the literature related to the topic as well as quantitative and statistical methods. The results obtained from the survey were collected, selected, and analyzed using statistical analysis tools. The research results provide answers to research questions and support hypothesis testing by producing qualitative and quantitative information concerning the importance of emotions and customer/user experience in interior design.

**Keywords:** Ux Design, emotions, creativity, concepts,

# The Effects of Interior Design on the Microeconomics: From the Perspective of Clients

Ylber Limani<sup>1</sup>, Anisa Mekuli<sup>1</sup>

<sup>1</sup> UBT College, Prishtina,

ylber.limani, am47334{ @ubt-uni.net }

**Abstract.** There is a practical and theoretical relationship between the economics, the customer, the economic spaces, and the architecture and design of spaces. This connection implies to this ecosystem the need to develop new forms required to fulfilling the requirements, needs and demands of the market. In this context, the interior design business is a subtle setting. The interior design of gastronomic spaces is supposed to have a significant impact on people when deciding to visit those places. However, we could not find a specific exploratory study that raises questions about the investment in interior design and its possible influence on the decision-making of customers to visit certain spaces and be eager to pay for products and services offered. Accordingly, this issue grew into motivation to discuss in this paper and to treat this as a research subject. Includes the research questions seek to find whether local business owners decide to invest in the interior design of their spaces with the motivation to attract and influence the consumer decision to buy the products and services offered by them. How can this matter be interpreted from the perspective of customers? The methodology used is mixed employing the theoretical part of literature review, and survey research as part of quantitative and statistical methods. The data obtained from the survey were collected, selected, and analysed using statistical analysis tools. The research results contributed to answering the logical questions and raising awareness of the connection between the design of spaces and economics.

**Keywords:** interior design, investment, concepts, economics, decision-making

# National symbols in function of interior design

Dr. Nexhat Çoçaj

UBT – Institucion i Arsimit të lartë, Lagjja Kalabria, 10000 p.n., Prishtinë, Kosovë  
[nexhat.cocaj@ubt-uni.net](mailto:nexhat.cocaj@ubt-uni.net)

**Abstract** Why the interiors, especially those of restaurants, are increasingly receiving the attention of placing national symbols. Until now, anthropologists have dealt with the classification of national symbols according to their historical function, while in our research paper we will focus on the creation and transformation of national symbols in business premises - restaurants, through social and economic interaction. First, national symbols in the social aspect, create the warmth of the environment and create the concept that the traditional prevails in that environment, which is actually a growing trend throughout the globe. So, the national symbols in the restaurant premises, create rapprochement between customers and the environment, as well as bring opportunities for spiritual communication between objects and people. Historical figures: Illyrian kings, Skenderbeu, Ismail Qemajli, Isa Boletini, Adem Jashari, national symbols: flag, eagle, pleat, helmets, KLA sign, etc., are some of the figures that are taking place in the interiors of restaurants to communicate with visitors - customers. In recent decades, there is a growing interest in the display of elements of tradition in family restaurants, such as household furnishings and work tools, parts of clothing: magic, cradles, plows, pitchforks, shirts, etc., elements of pagan beliefs such as the sun, snake, talisman, etc., which if well combined are put at the service of interior design, which figuratively present social aspects of the environments where they are exhibited.

**Key words:** Historical figures, sun, eagle, snake, talisman, flag, pleat, cradle, magic, etc.

# **The illegal outdoor advertising and its psychological, security and aesthetic consequences – Case of Municipality of Prishtina.**

Autor: Prof. MA.DG. Milot Gusia

**Abstract** This paper studies the overall situation of illegal outdoor advertising in the Municipality of Prishtina, its roots, its current situation, its risks for the security of the inhabitants, as well as the aesthetic and psychological consequences in the wellbeing of the local population. Furthermore, the research, through the examples of regulations applied in other developed countries (Europe and Australia) tries to provide solutions for the future regulation of outdoor advertising in the Municipality of Prishtina.

**Keywords:** Illegal outdoor advertising, optical and physical hazards of illegal advertising, Outdoor advertising in the Municipality of Prishtina.

# **The application of AR/VR technology in e-commerce Study on the experience of buying and selling in e-commerce based on AR/VR technology in the Republic of Kosovo**

Zymer Veliu

UBT University, Prishtina, Republic of Kosovo

**Abstract** Nowadays shopping through E-commerce (electronic commerce) using AR/VR technology is growing rapidly in the global market. If I take the statistics as a basis, according to Statista, the global augmented reality (AR), virtual reality (VR), and mixed reality (MR) market reached 28 billion U.S. dollars in 2021, rising to over 250 billion U.S. dollars by 2028. As part of the wider extended reality (XR) industry, the global AR market size is expected to grow considerably in the coming years. Well, even though these statistics are increasing day by day at the global level, we see that in the territory of the Republic of Kosovo, the companies that use E-commerce (electronic commerce) using AR/VR are still a small number of companies that have started to use to sell their own products through e-commerce using AR/VR. In this study we will present the main advantages that e-Commerce merchants can benefit from by adopting augmented reality (AR) and virtual reality (VR). However, there are various obstacles to overcome this goal, especially technical ones for expanding their use. This study investigates how AR/VR technology works and its possible impacts on online e-Commerce purchases, in relation to the commercial potential of AR/VR in e-Commerce in the territory of the Republic of Kosovo. What is augmented reality (e-commerce AR/VR) in shopping? Augmented reality in shopping allows customers to virtually try on and test products all through an electronic device.

**Keywords:** e-Commerce, Virtual Reality, Augmented Reality, VR Commerce, AR Commerce

# 11<sup>th</sup> International Conference

## Chapter: Fashion

### IC-Fashion

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# Body talk

Laura Ymeri

**Abstract** The topic analyzes with the interactive exhibition 'Body Talk', held at the Paper Gallery in Prishtina, in 2022. Through drawing, performance, use of light, interaction and sound effects, the artwork invites visitors to leave their mark during the exhibition. The goal was to spark interaction with the public during the performance, in particular with the daily activity that accelerates the effects of entropy. The experiment explores how far we can push the individual, and then examine for that effect on society in the wider context. By pre-designating the dots on the gallery walls, the stimulus was created for action-drawing by the visitors to connect the dots, to leave traces as a crowd after the impact, and finally to "build" something new "individually" within the group. This is reflected on the gallery walls by the visitors themselves. As part of the performance, the visitor converts into an artist.

# 'The impact of the symbol that survives trends'

Ardita Rizvanolli

University of Business and Technology-UBT, Prishtine, Kosova

[ardita.rizvanolli@ubt-uni.net](mailto:ardita.rizvanolli@ubt-uni.net)

**Abstract** The symbol has to do with the challenges of the time, keeping the design historically regardless of the challenges experienced during the economic, political and social crises. Citizens and professionals are exploring the ways in which fashion can contribute to promoting social and political changes for sustainable development. A symbol that survives the centuries and continues to be in the art of music, dancing, clothing, accessories are a value that is cultivated and remains an attraction not only because of its longevity but also the way it is lived. People have used it in war and in peace in various social and political issues. The symbol as a sign of our external identity, regardless of social status, position in society, is a fundamental reflection of presentation in any field: sports, music, politics, etc. Based on the influence of fashion, the symbol should be illustrated in a way to build a creative image.

**Keywords:** fashion, symbol, creative, identity,



# Zero Waste Design with Draping Technique

Ariana Gjoni<sup>1</sup> Nertila Memaj<sup>2</sup>

**Abstract** Every day clothing manufacturers produce millions of square meters of textile waste due to inefficient pattern-making processes. Zero Waste Garment Design addresses this by producing 100% yield garments. Not only is fabric waste eliminated, but the garment also retains its full potential to be modified or remade as another piece. The study aimed to use the draping technique in conjunction with Zero-Waste Design to save 15% of the material used per garment, resulting in significant environmental and commercial benefits and thus joining the Sustainable Fashion movement.

# **‘POP-UP’ – a presentation of student fashion designs in the times of COVID-19 pandemics**

Aferdita Statovci

University for Business and Technology, Prishtina,

Kosovo, aferdita.statovci@ubt-uni.net

**Abstract** This paper investigates the methods of showing the students work in an effective way in the time of the restrictions imposed by the COVID-19 pandemics. Special focus is given to the selection of the fashion designs, how the space itself serves as an environment which is in conversation with the works, as well as the curatorial process and presentation, not only as a reflection of the student’s works, but also as an artwork in itself that provides an extra layer of meaning and discussion. The ‘POP-UP’ fashion show begins with the designs by the 2-nd year students, to be followed by the 3-rd year students works. Finally we will focus on the process of putting together this much-anticipated digital fashion show which was organised in its entirety by the Integrated Design students past and present.

**Keywords:** exhibition, space, fashion design, fashion show, digital fashion, Integrated Design, students.

# 'Biomimicry in Mimesis of Fashion

Cennet Lika

University for Business and Technology Pristina, Kosovo

cennet.lika@ubt-uni.net

**Abstract.** Nature is an endless source of inspiration and will continue to be so in the future. Biomimicry states that the discovery of working principles in the systems of all animals, plants, living and nonliving organisms in nature has an important meaning for scientists to produce new ideas. Mimesis has a dictionary meaning of imitation, and as we know, one of the most important things in the field of fashion design is creativity, inspiration and innovation. When biomimicry and fashion combine, it is possible to create new and more technological designs by imitating nature. It is known that the fashion industry is one of the most polluting industries in the world. When it comes to biomimicry and fashion, new fabrics and clothing can be created that will protect the environment and make them more comfortable without sacrificing the appearance of those who wear them, thanks to biomimicry. This area, where science and design, creativity and engineering, sustainability and innovation intersect, can also intersect with Fashion and enable us to wear more comfortable clothes and a cleaner environment.

**Keywords:** Biomimicry, Mimesis, Fashion Design, Imitation, Technology.

# 11<sup>th</sup> International Conference

## Chapter: Law

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# Clean air for all –sick building syndrome and EU policy framework

Afrim Sylal, Visar Hoxha<sup>1</sup>, Mensur Morinal

<sup>1</sup>UBT, Lagjja Kalabria, Rr. Rexhep Krasniqi nr.56

10000 Prishtinë, Kosovë

afrim.syla@ubt-uni.net

**Abstract.** This paper is designed to point out potential problems related to indoor air quality, review steps that building owners and managers can take to investigate and correct problems, and assist in obtaining additional help with indoor air quality issues. Sick Building Syndrome is wide spread and may occur in offices, apartment houses, nurseries and schools, resulting in substantial costs to the community. Even though the cause effect relations are unclear it is possible to remedy buildings with SBS problems, and for new buildings the chances of avoiding SBS problems are also good. Modern people spend most of their time indoors in houses, day-care centers, schools, offices and other building facilities. This means that if they are unwell, they will suffer symptoms and discomfort while indoors, only some of which may be related to the buildings they occupy. European building policy has been under development since the 1990s. Under the leadership of the European Commission building standards and policies have gradually improved, taking into account issues such as financing solutions, renewable energies, indoor environmental quality, and the alleviation of energy poverty. The paper focuses on the key EU legislation aimed at transforming and decarbonising the European building stock. This includes: • The Clean Energy Package for all Europeans – a comprehensive set of legislation that defines European climate and energy policy beyond 2020. The Energy Performance of Buildings Directive (EPBD), the Energy Efficiency Directive (EED) and the Renewable Energy Directive (RED) cover the main issues regarding building policies on a European level. • A new Circular Economy Action Plan (CEAP) was adopted in March 2020. It includes measures that will help stimulate Europe's transition towards a circular economy and encompasses the entire life cycle of products and key value chains, including construction and buildings.

**Keywords:** Indoor air pollutants, EU policy framework on indoor air quality management,

# **A comparison of construction and spatial planning laws affecting housing prices in kosovo and slovenia**

Prof.Dr. Visar Hoxha

Prof.Asst.Dr.Egzzone Osmanaj

Prof.Dr.Alenka Temeljotov-Salaj

**Abstract** This article compares laws in Kosovo and Slovenia affecting housing prices. It also quantitatively examines the effect of these regulations on housing prices. It analyses 1,468 housing sales in Kosovo and 677 housing sales in Slovenia using random sampling and quantitative research. It finds that there are more similarities than differences between legal restrictions in Kosovo and Slovenia that affect housing prices. Slovenia has more advanced spatial and zoning laws that control urban and population growth. Finally, it finds that building regulations affect housing prices in both Kosovo and Slovenia. The practical implication is that real estate developers cannot merely build to lower standards to keep overall construction costs down.

**Keywords:** housing, housing prices, spatial planning, Kosovo, Slovenia.

# Comparison between turkish information service and albanian information service

Florent Azemi,

University for Business and Technology – UBT, Faculty of Law, Lagja Kalabria, 10000 Pristina, Kosovo.

**Abstract** From the regional point of view about some services or intelligence agencies and their systems, we have chosen the comparison between the Albanian information service and the Turkish one. In this direction, they will let us understand the hierarchy, the legislative regulation and the system of their operation. At the regional level, the information services are classified as soft, with the exception of the Turkish service. In fact, this service is part of the strong services, while it also has influence and role in Kosovo as well as good cooperation with its community. In the information service system of Albania, there will be gaps in the satisfactory functioning of the intelligent community. This is reflected in particular in the poor amount of information that is distributed about the highest institutions of the state. In this regard, this service gives the impression that we can compare it with any non-governmental organization or civil society

**Keywords:** Information service, intelligence, security, system, law.

# Consumer protection in e-commerce

Bashkim Nuredini<sup>1</sup>, Flamur Abrashi<sup>2</sup>

<sup>1</sup> Faculty of Law, University for Business and Technology, Kosovo

ORCID ID: <https://orcid.org/0000-0002-9748-2047>

e-mail: bashkim.nuredini@ubt-uni.net

<sup>2</sup> Faculty of Law, University for Business and Technology, Kosovo

e-mail: impulse2004@gmail.com

**Abstract** In every country, and therefore organized society, consumer protection is not only a sphere and issue of particular importance and weight, but also a major component for economic and social development. The consumer is the main element of commercial exchange and economic development. Without the presence of the consumer, who spends his own economic means to buy products and services, there would be no sellers, manufacturers or service providers, because they would have no one to sell, produce or provide services to. The level of development of consumer rights is a reflection of the general economic and social environment of a country. Developments in the field of information and communication technology in the last decade have significantly changed the way of life, offering new opportunities for consumers and business entities. In today's digital world, consumers can easily manage all kinds of personal financial activities online. Purchases by e-commerce usually involve businesses and consumers coming from different jurisdictions, hence the need to create a unifying framework in the protection of producers and consumers in the sphere of e-commerce. To protect the growing number of consumers who are active online, it is necessary to establish a legal framework and develop strategies to help ensure the security of consumer transactions in e-commerce. In the absence of legal protection, consumers would be subject to fraud and other illegal activities, putting their personal finances and privacy at risk. With continuous technological advancement, it is unclear how effective the existing consumer protection law enforcement scheme will be in the coming years.

**Keywords:** e-commerce, online, consumer, protect, OECD, UNCTAD.



# The challenges of supervising the work of the Government and other public institutions by the Assembly of the Republic of Kosovo-empirical analysis

Dr.Sc. Mervete Shala Dr.Sc. Xhavit Shala

E-mail: [mervete.shala@ubt-uni.net](mailto:mervete.shala@ubt-uni.net) E-mail: [xhavit.shala@ubt-uni.net](mailto:xhavit.shala@ubt-uni.net)

**Abstract:** The purpose of this paper is to examine the current state of supervision and control of the work of the government by the Assembly to guarantee fair governance in the Republic of Kosovo. For this purpose, the study has identified some of the challenges faced by the Assembly of Kosovo in seven legislatures during the exercise of supervision and control of work of the Government and other public institutions which, based on the Constitution and laws, report to the Assembly of the Republic of Kosovo. Qualitative and quantitative research methodology was used in the paper. The qualitative research method analyzes laws and by-laws, in interviews and questionnaires with senior public officials and civil society. In the paper was also studied, the quantitative or statistical method during the study of numerous materials, the study of the annual reports of Institutions and in the empirical part. Data findings from empirical research (interviews and questionnaires) show that the Assembly has not managed to sufficiently supervise the work of the Government and other public institutions. The results of this study show that the Constitution of the Republic of Kosovo provides the legal basis for the Assembly to exercise the constitutional mandate to supervise the work of the Government and other public institutions. There is sufficient legislation regarding the supervision and control of the work of the Government and other public institutions. However, the legislation has vacuums of a procedural nature; there is ambiguity in the legal provisions. For this reason, a legal reform is necessary. In addition, the study offers recommendations for increasing the level of parliamentary supervision of the work of the government for the improvement of good governance, describes the focus of legal reforms and the measures that are necessary to be taken to strengthen the Assembly for the supervision of the work of the Government and other public institutions which, based on the Constitution and laws, report to the Assembly.

**Key words:** Assembly, Government, supervision, accountability, reporting.

# Legal aspects of environmental protection

Mexhit Musa

University of Travnik, Faculty of Pharmacy and Health, Travnik, Bosnia and Herzegovina

Email: [mexhit-musa@hotmail.com](mailto:mexhit-musa@hotmail.com)

**Abstract:** Our environment, which is an integral and inseparable part of the entire biosphere, the thin mantle of the earth covered by life. Pollutants are increasingly threatening the purity of air, water and land. Simply put, the environment is the natural environment, i.e. water, air, soil, flora and fauna, climate, ionizing and non-ionizing radiation, noise vibrations, but also the human-made environment, ie. settlements, various facilities and infrastructure. Man hoped that his environment would absorb unlimited amounts of industrial waste without disturbing the biological balance in nature. Pure natural air contains 79.09% nitrogen, 20.94% oxygen, 0.93% argon, 0.03% carbon dioxide and trace elements and water vapor. Any other mixture that deviates from said composition is polluted air. By origin, air pollution can be natural and artificial. Natural pollutants are created independently of the will of people, mainly in the form of dust of terrestrial and cosmic origin. They are distributed throughout the country in small and harmless concentrations. Man-made pollutants occur in densely populated industrial areas and high traffic areas. This type of air pollution is very harmful and in adverse weather conditions, when the limit of the natural forces that clean the atmosphere is reached, they can have catastrophic consequences for people. Scientists, however, warn that the balance of ecosystems is very disturbed. This can be best observed in industrial settlements, where, under the influence of air pollution, great disturbances in the biocenosis often occur. These disturbances occur due to the destruction of vegetation, which, compared to some air pollutants, is much more sensitive than man, and therefore suffers before man notices the presence of the agent. In addition to damage in the ontogenesis process, which is caused by pollutants, genetic damage is also possible for future generations. Until 40 years ago, the possible consequences of environmental pollution were not thought of. Little attention was paid to the consequences of pollution, first the residents of big cities and industrial centers suffer from polluted air and this is also the case with Kosovo.

**Key words:** environment, environmental protection and criminal legislation, phenomenological aspects of criminal offenses against environmental protection, preventive measures, repressive measures and legislation.

# **The construction contract and its practical problems: management of the construction cost increase**

Prof.Asst.Dr.Egzzone Osmanaj

Prof.Dr. Visar Hoxha

Bsc.Fjolla Fejza

**Abstract** This study analyzes the legal framework on the construction contract and its practical problems. The aim of this study is to research the different aspects related to the implementation of construction contracts in practice. Also, the study aims to research the development challenges and perspectives of construction companies in Kosovo. In particular, this study tries to identify the problems that construction companies are facing due to the economic crisis and the increase in construction costs. For this study, 10 construction companies were surveyed. The random selection method was used for the selection of the sample, and the data results were analyzed through the descriptive method. The findings of this study show that the main factors that are currently limiting the activity of construction companies are the rise in the prices of construction materials and the lack of labor.

**Keywords:** construction contract, construction company, contracting parties, construction, prices, law.

# Legal relations in the economy of states

## Case study kosovo and neighboring countries

Shpëtim Memishi, PhD

University of Travnik, Aleja Konzula br. 5, Travnik 72270, Bosnia & Herzegovina

E-mail: shpetimmemishi@gmail.com

**Abstract.** The impact of the economy in countries with great powers, as well as in developing countries, has taken a leap a great uncertainty due to the causes of wars and epidemics that have occurred in recent years. Many countries are facing various crises and challenges of the global climate as well as the recent war between Rusia and Ukraine, which caused a chaos in lives businesses. Now this is a challenge in the managment of the economy and the living of citizens who face the increase in prices, with supplies of raw materials: wheat, corn, derivatives(oil, gasoline and gas), various consumer foods,etc.. Today, Kosovo is facing the same global crisis, even though it went through these upheavals during the 1997 – 1999 war. In cooperation with countries such as : USA, Albania, England, France, Germany, and many other countries had helped us to have freedom today, also cooperate for the development of the newest state. The state of Kosovo has many collaborations with these states in the management and leadership of its largest sectors and also by bringing their experience in economic and administrative development. Today we have a lot of documentation about properties that are in its archives, as well as with their forgeries from neighboring countries such as Serbia, intentionally or not they were lost or burned. For this reason, the courts and Ministry of Justice are trying to fix the problems that have arisen. The Ministry of Justice, through lawyers and notaries, are fixing many problems that appear in businesses and private properties, which for the business sector is more than necessary for solving problems and facilitating their agreements.

**Key words:** Kosovo, USA, economic development, ministry of justice, derivates, challenges.

# Effective community-police communication and the prevention of criminality

Prof. Dr. Aurora Karameti, Arta Bilalli

Law Faculty, State University of Tetova, Str. Ilindenska n.n., Tetovo, North  
Macedonia,

Email: [aurora.karameti@unite.edu.mk](mailto:aurora.karameti@unite.edu.mk)

Law Faculty, State University of Tetova, Str. Ilindenska n.n., Tetovo, North  
Macedonia,

Email: [arta.bilalli@unite.edu.mk](mailto:arta.bilalli@unite.edu.mk)

**Abstract:** Community policing is a relatively new concept in Western Balkan countries despite the communist heritage of secret informative services that use to have detailed information about almost everyone's life. This heritage has probably an impact to the mentality of communities, expressed into their communicative approaches towards police and criminal elements. This paper tends to explore the communication process between the communities, police forces and victims in North Macedonia and Albania. The objective is to understand the challenges and the causes of failures of the flow of this communication which is far of being effective, even nowadays. In this paper we use quantitative data collected by the police authorities of both countries and qualitative data collected by both national news media. We use framing theory for building our model of analyses as well as for the interpretation of the results. The methodology used is mixture of normative research methods and media communication research methods. Discourse analyses is used to collect the data. The time frame under analyses is the first part of the year 2022. The results of the research conducted prior to this paper show that it exists a deep communication gap between local communities and the police both in North Macedonia and in Albania which is a major reason for the non-prevention of criminality. The reasons are multiple, some of them are similar in both countries but some of them are totally different. The legal framework for the community policing is quite similar to those of other developed countries, but the implementation is quite different. The news media plays its part in this flow of communication. This paper concludes with some recommendations on how to improve this communication in better using the advantages that both countries offer.

**Key words:** community policing, criminality, communication, media.

# Reconceptualizing Security: The Economic Dimension of Cyber Security and the Copenhagen School

Prof. Dr. İbrahim Arısoy

Ferdi Redžepi PhD (c)\*\*

\* Police Academy, Institute Of Security Sciences, Anıttepe, Necati Bey Caddesi  
No:108, 06570 Çankaya/Ankara, Republic of Turkiye

\*\* Police Academy, Institute Of Security Sciences, Department of Security Strategies  
and Management, Anıttepe, Necati Bey Caddesi No:108, 06570 Çankaya/Ankara,  
Republic of Turkiye

**Abstract.** With the complication of international relations, and the emergence of new security challenges, threats and risks that the international community, states and every human being faced after the Cold War, the traditional approach to the concept of security slowly began to change. Therefore, the traditional concept of security with distinct focus on the state, that is, national security and the military sector, has become too narrow, and a new conceptualization had to be approached. Namely, climate change, the energy crisis, ethnic conflicts, the changing nature of terrorism, pandemics, economic problems, financial crises, threats to the security of information technologies, cybercrime and other threats and risks are no longer isolated events that can be closed within national borders. For these reasons, towards the end of the 20th century, many schools were created that began to deal with new concepts of security. In the beginning this was based on peace studies due to the atmosphere of the Cold War, and later through critical studies and schools. A big mark in the new conceptualization of security was left by theoreticians of the Copenhagen School. The Copenhagen School is based on two important conceptual developments in the study of security: Barry Buzan's ideas on the sectoral analysis of security and Ole Waever's concept of 'securitization'. It is precisely the main goal of this work is to try to explain the economic dimension of cyber security through the theory of securitization and learning of the Copenhagen School from the aspect of threats and reference objects. It is considered that 'individual security' is an important reference object that interacts with the economic dimension of cyber security, but also that their political and global importance stems from the connection with other 'vertical' levels of security such as 'international', 'regional' and 'national' security.

**Keywords:** Copenhagen School, Economic Security, Cyber Security, Cyber Threats, Securitization

# **International Diplomacy and Albanian question in Former- Yugoslavia 1991-1993**

Isak Sherifi

UBT

[isak.sherifi@ubt-uni.net](mailto:isak.sherifi@ubt-uni.net)

**Abstract** Kosovo as an autonomous constituent part of Yugoslavia (now a disintegrated state from which seven independent states emerged) has always been a land coveted by Serbian invaders, either for its natural resources above and below ground, or for its geopolitical position. Being constantly under the pressure of the Serbian hegemony behind which Russia has stood since the beginning of the expansionism, it has been able to withstand this hegemony even with very big losses in all spheres of life, over the years and centuries. This part of the new story about Kosovo in geopolitics will become part of the international agenda, especially during the period of wars in the former Yugoslavia. Kosovo will become part of the international agenda, especially of the USA, the European Parliament, and in particular it will be in all the annals of the foreign and domestic press. It would prove that the political circumstances created in this part of the former Yugoslavia were very tense. The issue of Kosovo was being dealt with in different dimensions, resolutions, international reports will follow, Kosovo will also be part of the debate in the European Parliament, the peace conference in The Hague, and on the other hand, the Albanian political spectrum will be at the level of the task.

**Key words:** Geopolitical, Kosovo, international, parliament, politics, agenda, etc.

# “Trafficking human beings and organized crime”

Dr.Sc.Shqipe Kastrati

LS School Str. "Besim Nrecaj", Prizren, Kosova

E- mail: eagle59-1@live.com

**Abstract** According to the United Nations Protocol, Trafficking in Human Beings (HRT) means: "The recruitment, transportation, transfer, concealment or taking of persons for any purpose or in any form by threat or use of force or by abduction, deception, cunning, coercion or abuse of power in order to slavery, forced labor, and slavery. " Trafficking is a global problem. Based on the statistics of different world organizations, every year around 2,000,000 men, women and children are trafficked, with 80% of them being women and girls, while about 50% are juveniles. Trafficking in human beings, after trafficking in narcotic drugs and weapons, is considered to be the most widespread criminal activity in the world. Looking at the monetary aspect the figures are astronomical. The United Nations Center for Crime Prevention estimates that the global profit from this type of crime is over \$ 8 billion. The International Convention of 2000, with the term "Organized Criminal Group" means a structured group of consisting of three or more persons who exist for a certain period of time and who cooperates in order to commit one or more serious crimes or offenses established by this Convention with a view to obtaining direct or indirect benefits property or financial. What is most tempting for "organized crime" is the exploitation of markets where there is a high demand for certain services and goods, which, because of the restrictive laws and regulations currently in that country, can not to be filled in legally. Factors that promote organized crime are factors of political, social and economic character. These various factors and circumstances have influenced the emergence of early forms of illicit organized activities as well as the evolution and sophistication to the present day.

**Key words:** United Nations Protocol, Human Beings (HRT), Organized Criminal Group.



# **Sequestration and Confiscation of Illegal Assets in Kosovo: The role of the Agency for the Administration of Sequestered and Confiscated Assets and the importance of the sale of sequestered assets before final court decision.**

Alban Sutaj, Msc

**Abstract:** As the main objective of the Agency is to become a 'center of excellence' in the administration of seized or confiscated property, its mission, role and responsibilities are needed to be clear and therefore properly elaborated. This is important especially when taking into account that the Agency bears responsibility for the preservation and administration of seized or confiscated property entrusted to its care by the competent authority and it performs its functions in order to provide profitable and professional asset management and conducts its work with integrity and transparency. The purpose of this paper is to elaborate the sequestration and confiscation of the assets seized and confiscated in Kosovo as it is foreseen in the relevant legislation: the Criminal Code, the Code of Criminal Procedure; Law on expanded powers for confiscation of property and Law on the administration of seized and confiscated property. The procedures for acceptance, evaluation, preservation of the value of the seized or confiscated property, as well as the sale as a way of preserving the value of the seized or confiscated property will also be presented. In any case where we are dealing with extraordinary administrative expenses such as: cars, products or other assets that are likely to deteriorate or lose value, interim sales applications should be considered. before the confiscation order is made. The goal here is to ensure that we have the maximum value available for forfeiture upon conviction. The use of confiscated assets for social purposes is also important, which part will take place in my paper, without leaving aside the local and international cooperation in terms of sequestration, confiscation and administration of assets.

**Key words:** sequestration, confiscation, asset, evaluation, preservation.

# **“The position of Albanian women in customary law and its effects on subsequent developments: A comparative perspective”**

Prof. Asoc. Dr. Islam Qerimi, LL.M

PhD. Candidate Dorajet Imeri

Faculty of Law, University "Isa Boletini" Mitrovica

[islam.qerimi@umib.net](mailto:islam.qerimi@umib.net)

Faculty of Philosophy, University of Prishtina ‘‘ Hasan Prishtina’’

[dorajet.imeri@uni-pr.edu](mailto:dorajet.imeri@uni-pr.edu)

**Abstract:** The object of treatment of this paper is the comparative presentation of the woman's position, according to the Albanian customary law and the modern one, regarding the status of gender equality compared to the man. It is known that the issuance of legal norms and their application should be examined according to the context of the time and the social, economic and political circumstances that have been a relevant indicator. Therefore, the creation of the norms of the Albanian customary law belongs to the earlier periods of time that were applied by the Albanians. This unwritten right has been expanded, shaped, preserved and transmitted orally from generation to generation until the 20th century, when it began to be summarized and codified through Albanian canons. For the most comprehensive documentation of the woman's position in the family community and in society, the authors have treated from different perspectives the entire time from the age of birth to death. According to the old law, it turns out that even though the woman was oppressed in relation to the man, she nevertheless enjoyed a multitude of rights which the man was obliged to implement precisely. It should be emphasized that the life, bodily integrity, honor, irresponsibility and inviolability of women in the various conflicts caused between Albanian families are considered to have been a special object of protection with the norms of this traditional right. Today, women enjoy many rights in our society, but some rights, such as those of a social and political nature, still depend on the canonical norms established in society.

**Key words:** woman, gender equality, Albanian customary law, positive law, politics.

# The causes of terrorism

LL.M. Fadil CURRI

UBT, Faculty of Law, MA student at Criminal Law

email: [fadi.curri@gmail.com](mailto:fadi.curri@gmail.com)

**Abstract** Terrorism is one of the forms of violent actions, which increasingly threatens both domestic and international security of the modern world. The elements of terrorism we can find already in all criminal codes of the world's countries, also we can find it in all stages of human society. The actions of extremist groups dissatisfied with their leadership of a country result in murder, even emperors, kings, military leaders have not been spared, also the killing of state officials of all levels. Identifying the causes of terrorism has been the goal of researchers for many years. By identifying the causes that lead to terrorism, a comprehensive war against it can be launched. Finding a difference has been impossible for researchers until now, so I believe it's a multidimensional issue. This paper will try to answer some questions within the economic, political and social fields that have been analyzed against the number of terrorist incidents that the world has experienced over a period of 20 years. These causes were analyzed in retrospective and the paper will find that social inequality, democratization, respect for human rights and school enrollment will all be contributing factors. However, in this paper it will be understood that religion is an important role in the increase of terrorist incidents. An example is the arrest of religious clerics in Kosovo and the region, under the suspicion of recruiting young people for the war in Syria with the ideology of " the war for the land of Sham". Terrorism can also be analyzed from the personality point of view, and on this level it has been proven that a factor can also be the individual's desire to belong to a group. Individuals who join and stay in terrorist organizations need the feeling that they belong to a group, and such organizations are a perfect nest for them because the connection between members is very close.

**Keywords:** Terrorism, Causes, Nations, Society, Security, Actions

# Some of the driving factors of migration

Mr.sc.Rina Zejneli

Supreme Court of the Republic of North Macedonia

Address: XCXR+5JC, Skopje 1000, North Macedonia.

e-mail: [Rz24677@seeu.edu.mk](mailto:Rz24677@seeu.edu.mk)

**Abstract:** Migration, as a sociological phenomenon, also requires legal regulation, both national and international, and today, for this reason, there are a number of international conventions that regulate migration issues. During socio-economic formations, migratory movements have never been spontaneous processes, but they have been prompted by a series of factors, such as; economic security, high unemployment, poverty, violation of human rights, persecution due to political beliefs, discrimination, totalitarian government, armed conflicts, religious conflicts, etc. Migration can be internal and international; the same are distinguished among themselves according to the criteria of territory and state borders. The state territory and the borders of a state that is different from other states, is regulated by international legislation and international law. Regardless of whether we are talking about countries of origin or countries of transit, today all countries face the challenges of migration. Even the Republic of North Macedonia as a transit country has been affected by this global phenomenon, also because of its geographical position which is located on the Balkan-Western route, which is a transit route for entering European countries. Migrants who use this route mainly flee from the wars taking place in the Middle East, who first stop in Turkey or Greece, and then in various ways use the territory of the Republic of North Macedonia as a transit to Serbia or even Albania to pass in the countries of the European Union.

**Key words:** migration, economic, social, and political factors, poverty etc.

# Test method in the function of obtaining security data from insiders

Asst. Ph sci. Omer Gabela

Mr. sci. Edin Malkić

**Abstract** Obtaining - collecting data in all types of research is one of the most complex and demanding challenges of modern social reality and modern research processes. During these processes, various types of data acquisition methods are used with the unique goal of making these data the most accurate indicators of the characteristics of the phenomenon being investigated and studied. One of the methods used for this purpose is the research method, applicable for all types of research and data collection of various types and categories about various phenomena and realities of social reality. However, the special completeness, complexity and layering of data is manifested in the security sector and for this purpose the collection of data of a security nature. It is from this area - the area of security that the research question of this work is defined, which refers to the importance of collecting data of a security nature through the method of examination and that from a specific category of respondents - persons who are part of a group, collectivity, etc., which is the subject of research and studies, known in contemporary literature as - insiders. In order to successfully respond to such a research task set in this paper, it is necessary to consult relevant contemporary methodological literature, as well as literature from the field of social sciences, which in its domain of study includes security phenomena as specific phenomena of social reality. Only with such an approach is it possible to achieve the basic purpose of the work, and it concerns the complexity and difficulty of gathering data of a security nature through the method of questioning from insiders, i.e. persons who are part of the internal organizational structure of the group being investigated or studied.

**Key words:** data acquisition, data acquisition methods, testing method as a data acquisition method, security data, insiders.

# **Residential rights of surviving spouses: a theoretical analysis of the inheritance legislation in Kosovo and trends of progress**

Jorida Xhafaj

University for Business and Technology, Lagj. Kalabria, Pristina, Kosovo

**Abstract.** The purpose of this paper is to examine the legal protections for survived spouses' residential rights. From the old Roman system to modern rights, the survivor spouse's position has changed dramatically throughout history. Kosovo's inheritance law grants the surviving spouse the right to use the residential-marital facility where he lived during the marriage until his death or remarriage. If the residential object is sold or otherwise alienated, the surviving spouse receives the necessary object of residence. In order to ensure the application of this right, residential rights have been discussed even during the most significant changes in the country's civil legislation. The paper is divided into two sections: the first presents the current regulation and the contradictions that can be caused from the legal amendments, based on article 24, paragraph 3 of the Constitution of the Republic of Kosovo for the necessary measures for their protection and progress to be forced and for groups in an unequal situation to be applied only for specific purposes; and the second analyzes whether the trends of progress guarantee that positive discrimination and affirmative action measures will be successfully implemented.

**Key words:** residential rights, survival spouses, inheritance legislation, Kosovo

# Abolition as a legal institution in presidential system countries (concrete cases in the usa)

<sup>1</sup>Mitasin Beqiri-PhD, <sup>2</sup>Senat Saliu-MA.

<sup>1</sup> Associate Professor, College “BIZNESI”, Republic of Kosovo 10 000 Pristina, Ulpianë Str. “Motrat Qiriazi” No.18 Pristina, Republic of Kosovo, Email:

[mitasin.beqiri@kolegibiznesi.com](mailto:mitasin.beqiri@kolegibiznesi.com)

<sup>2</sup>Assistant Master, AUE – FON University, Str. Kiro Gligorov b.b. 1000 Skopje, Skopje, Republic of North Macedonia, Email: [senat.saliu@fon.mk](mailto:senat.saliu@fon.mk)

**Abstract** The state authorities are created to perform a regulation. The state authorities' jurisdiction is manifest through its function. The function one way or another arises from the will of the population. The faith in the proper functioning is a cornerstone of a democratic society. The proper functioning is a democracy. The abuse is danger, and goes along with the exceeding of the authority. The solution is a creation of clear legal norms and procedures that provide clean instructions. That is way to get to the product the authorities to perform their function without having the opportunity for abusing of the position which results with a stable democratic society. The president of each country is a state authority, a public body which has key responsibilities and powers. Whatever the system of organization of the power, the president of a country has the power and ability derived from law to impact directly on the important developments. As the choice of the people, it is considered that the people believe to him. Any further breach of the trust on a personal level is reflected in the insure position of the next election. But the consequence for the people and the country means establishing negative on the international scene and unfavorable future prosperity. Attention should always be at the highest level.

**Keywords:** president of country, abolition, pardon, amnesty, democracy, legal certainty.

# European union and dilemmas unresolved balkan

Dr.Sc.Shqipe Kastrati

Albana Kastrati

LS School, Str. "Besim Nrecaj, Prizren, Kosova

E-mail: [eagle59-1@live.com](mailto:eagle59-1@live.com)

LLM student in Department of Criminal Law, UBT College, Faculty of Law

E-mail: [Ak43064@ubt-uni.net](mailto:Ak43064@ubt-uni.net)

**Abstract** The European Union is a "sui generis" organization (a special type), which one is evolving over the time. This organization is a conglomerate of nations which have a single goal, the progress of their country, in principle, always working through the advancement of the organization in general. Ways of organizing and the functioning of the EU, with some modifications, the weathered dignity, the challenge of growth. However, the changes can only move forward. Given this fact, we refer to the most important challenge of Europe and his Constitution. Ratification of the Treaty of Lisbon cut "troubled souls" in the EU since it is know that the treaty contained over 70% of the content of the European Constitutional treaty. We can say that the European politics, this time has passed the test of challenging which was submitted to the mark the continuation of reforms in contradiction with their slowdown and stagnation. With the beginning of the democratic development in Easter Europe, the Albanians were the first who asked for their right to self-determination. For European recognition of the new republic crucial was status of a Republic and the combination of the principles of the concept of "European" and that "classic". When there was not stability in Balkans, when the war in former Yugoslavia started; Slovenia, Croatia, Bosnia and Herzegovina, Kosovo was not independent, when the war began in the Presheva Valley, nor when the war started in Macedonia, Kosovo was not independent. In a conclusion the answer to this wrong perception would be: the independence of Kosovo has stabilized the Balkans.

**Key words:** The European Constitution; the Treaty of Lisbon; Legal-Constitutional Status.



# Compensation for victims of crime

Prof. Asst. Dr. Sc. Nuredin Lutfiu,  
University for Business and Technology, Lagja Kalabria, Pristina, Kosovo  
e-mail: [nuredin.lutfiu@hotmail.com](mailto:nuredin.lutfiu@hotmail.com)

**Abstract** The responsibility of the state to compensate victims of crime is a responsibility recognized throughout the world. The importance of victim compensation is raised as an argument for the social well-being of citizens and therefore it is considered the responsibility of the state to provide security and guarantees for its citizens. If it fails to protect citizens from violent crimes, then the state must offer compensation to those who are affected by crimes that could not be prevented through state mechanisms. Victim compensation differs from restitution in that it refers to payments the government makes to the victim of a crime, rather than payments by the perpetrator to the victim. Most Western countries have established their victim compensation programs since the 1960s. For example, the United States of America (US) passed the first compensation legislation in 1965, when the state of California ratified its first program to provide financial assistance to crime victims. On the other hand, the European Union (EU) has several legal mechanisms and frameworks that guarantee the right of crime victims to compensation, which are also reviewed based on the "International Legal Framework common to all Western Balkan countries is that none of them have a functioning victim compensation program, with a set budget and an existing compensation commission. Legally, Kosovo stands as an exception to this rule. However, Kosovo also faces significant challenges in the implementation of legislation. Since 2015, Kosovo has established a program for compensation of crime victims.

**Key words:** Victim, maltreatment, compensation.

# **“The right to cultural identity, the balance and elements of consociational democracy”**

Flora Kadriu

University for Business and Technology – UBT, Lagja Kalabria, 10000 Pristina,  
Kosovo.

Email: flora.kadriu@ubt-uni.net

**Abstract.** The motive for compiling this paper is the attempt to research the topic of consociational democracy (some authors call it consensual democracy) or more generally - democracy in multicultural societies. Firstly, the paper aims to examine the topic of cultural differences in politics, closely related to its legal roots and sources - such as: classic civil-political rights as the oldest human rights, individual rights or rights from the first generation (she - liberty). The main challenge was researching the connection between consociational democracy and individual rights. Namely, deriving the practice of consociational democracy from individual human rights and freedoms (supplementing them with a set of minor rights), but not from the collective concepts of communitarianism. This connection of consociational democracy with individual rights represents exactly the intricate **BALANCE** (which is a big, frequent and special problem) between the protection of individual human rights and collective cultural rights, which are combined in the political system of this democracy. As difficult as it is to establish and maintain such a balance, it is necessary, .i.e the key to a stable and effective consociational democracy.

**Key words:** consociational democracy, cultural identity rights, individual rights, balance - the connection between consociational democracy and individual rights.

# Financial effects from unperformed framework contracts as results of the global crises on the kosovar' public companies performance

Bekim Sylaj PhD, Veli Lecaj PhD, Sabri Ternava

“ Cyril and Methodious” Skopje

UBT, Pristina

[bekimsylaj@hotmail.com](mailto:bekimsylaj@hotmail.com); [veli.lecaj@ubt-uni.net](mailto:veli.lecaj@ubt-uni.net); [sabri.r.ternava@kek-enrgy.com](mailto:sabri.r.ternava@kek-enrgy.com)

**Abstract** The production and service activities of Kosovar Public Companies, as in any other country, are related to heavy technology usage, most of them are inherited and some adapted actively on production capacities related to continuous and costly supply and maintenance, companies use the legal instruments of framework contracts to provide and maintain technologies and services. Under normal conditions, the framework contract gives companies the financial opportunity to anticipate expenses and plan them through the contracting authority with private companies as providers of these services/works in the company. Our paper aims to enlighten the effect on the performance of Kosovar public companies with examples and practices of unperformed framework contracting obligations by service/work providers due to global crises such as the Pandemic, Wars in the region and other global financial crises that affect the unperforming of these framework contracts. Knowing that our legal procurement system needs frequent and continuous improvements to solve the unperformed of framework contracts, both in the legal and financial aspects, which affect the performance of public companies, on those cases brings up two main deficiencies:

1. Delay in planning of technological assets usage.
2. Decrease in financial performance resulting from lengthy legal and financial proceedings.

The methodology used on this paper is mainly on secondary sources obtained from the reports of relevant vendor and international institutions, noting the financial effect of unperformed framework contracts on the performance of Kosovar Public companies.

**Keywords;** Framework contract, economic court, financial effects, financial decision-making, Public Company Performance

## “ EU Law on mediation for the resolution of civil disputes”

Fatime Dërmaku, PhD.cand  
University of Prishtina, Faculty of Law

Email: fatimederma@hotma.com

**Abstract** Mediation is considered a novelty in the resolution of disputes by alternative mechanisms. The utilization of mediation has been highly promoted due to its many benefits. Alternative dispute resolution mechanisms have many faces and can be applied into different manners, which can lead to difficulties into their function as equal mechanisms to litigation. The regulation of mediation by law aims to present a common framework for its application as a path to justice for the resolution of civil disputes. The aim of this study was to analyze the current EU laws that are applicable on the regulation of mediation. Directive 2008/52/EC of the European Parliament and Council regulates certain aspects of mediation in cross-border, civil and commercial disputes. The Directive regulates multiple aspects as the resources to mediation and the enforceability of agreements of mediation. Many European countries have developed their own mediation laws in compliance with the Directive 2008/52/EC. The methods used in the study are literature review and the analysis of legal materials. In conclusion it is considered that the EU law on mediation serves as a framework of institutionalized mediation and that it has positively impacted on the promotion of mediation as a mechanism for dispute resolution in civil disputes.

**Keywords:** Mediation, Directive 2008/52/EC, EU law, dispute resolution

# **Socio-economic criminogenic factors that affect Juvenile delinquency**

Ahmet Maloku

Associate professor, UBT - Higher Education Institution, Faculty of Law. Department  
of Criminal Law. Pristina, Republic of Kosova.

E-mail: [ahmet.maloku@ubt-uni.net](mailto:ahmet.maloku@ubt-uni.net)

**Abstract:** Many different factors influence the occurrence of juvenile delinquency, therefore the problem of the research is to analyze the impact of socio-economic criminogenic factors on juvenile delinquency in Kosovo. The purpose of the paper is to elaborate and analyze five groups of criminological factors which directly or indirectly influence the occurrence of juvenile delinquency. Descriptive, meta-analysis and comparative methods are used in the paper. The main findings of the paper show that social circumstances, in addition to poverty, are economic-social criminogenic factors influencing the appearance of juvenile delinquency. Research from the etiological aspect of juvenile delinquency as a very disturbing and quite complex phenomenon is analyzed from the multidisciplinary aspect of the impact of economic-social criminogenic factors on the appearance of juvenile delinquency. This paper will contribute to the work of persons dealing with the prevention and combating of juvenile delinquency.

**Keywords:** Criminogenic factors, juvenile delinquency, poverty, social factor, social circumstances, social disorganization.

# The transposition of EU state aid rules to Kosovo legislation: legal aspects and implications

Elton Tota

University for Business and Technology – UBT, Faculty of Law, Lagja Kalabria, 10000  
Pristina, Kosovo.

**Abstract:** The rules on state aid in Kosovo should be in compliance with the obligations that the country has assumed with the Central European Free Trade Agreement (CEFTA - 2006) the Energy Community Treaty (2006) and later with the Stabilisation and Association Agreement (SAA – 2016). The shortcomings are numerous and evident. Therefore the objective of this paper is to highlight such shortcomings which consist of as in the following: how far Kosovo fulfilled the aforementioned international obligations in the field of state aid ?, what does this set of rules currently require of Kosovo?, what is the applicable legal framework in the field of state aid and the shortcomings of the existing Law on State aid, what are the new principles and criteria any new draft Law on State aid should take into consideration, what are the issues to be regulated by the institutional control of State aid as well as detailed requirements in regard with State aid assessment, monitoring and reporting. The paper concludes that any legislative changes that may consist of the new Law on State aid should be clear in defining the principles, procedures and conditions for granting state aid as well as in state aid monitoring procedures on revocation of state aid. Further, in addition to the amendments to the Law on State aid, the adoption of secondary legislation with the EU state aid *acquis* is of high importance and complements it.

**Key words:** State aid rules, Stabilisation and Association Agreement, EU *acquis*.

# **Electoral trends and invalid votes in kosovo 2001 – 2021**

## **- comparative aspect**

Dr.sc. Xhavit Shala

Dr.sc. Mervete Shala

Prof. asoc. Dr. Bashkim Bellaqa

E-mail: [xhavit.shala@ubt-uni.net](mailto:xhavit.shala@ubt-uni.net)

E-mail: [bashkim.bellaqa@umib.net](mailto:bashkim.bellaqa@umib.net)

E-mail: [mervete.shala@ubt-uni.net](mailto:mervete.shala@ubt-uni.net)

**Abstract** The valid and the invalid votes in Kosovo for two decades (2001-2021) are in contradiction with each other. While we have a decrease in the participation of citizens in elections, we have an increase in invalid ballots. In the last national elections on (February 14) 2021, the number of registered voters was 1,851,927, the participation in the elections was 903,386 (48.78%), while the number of invalid ballots was 33,271 (or 3.62%). The trend of participation in the elections in the eight (8) legislatures was the highest in 2001 with 64.30% and the lowest in 2007 with 40.09%. Although the participation was low in these elections (2007), the number of invalid ballots (votes) is the highest of all election cycles with 9.02% while the lowest number of invalid ballots was in the elections for the first legislature in 2001 with 1.93%. The purpose of the paper is to review the causes of the low participation in the elections (less than 50%) and the large number of invalid ballots. As well, we will try to answers to the questions: what factors are affecting the citizen's non-appearance in the elections? are the ballots/votes invalid as a result of citizens not being properly informed about how they should vote or rejection of the political alternative? From the analysis of CEC publications and findings, there have been cases where voters have deliberately damaged the ballot. We can consider this as a rejection of the offer/political platform of the political subjects or the list of candidates and as disappointment for the work and engagement in the past, whether as a governing or opposition party. Consequently, this is a reason for hesitation/refusal to participate in elections or spoiling of the ballot. In this paper qualitative and quantitative research methodology is used. The qualitative research method analyzes laws and sub-legal laws. During the analysis of the reports of the election processes of the CEC and international and local observers the comparison method and the statistical method was used. The findings of the research show that among the states of the region, Kosovo remains among the cases with the highest percentage of invalid ballots.

**Keywords:** Election, Electorate, valid votes, invalid ballots, CEC

# Suicides in the region of Gjilan during the period of 2010-2020

Mr. sc. Agron Uka,

Basic Prosecution in Gjilan

Address: Rr. Maria Shllaku, pa nr 60000 Gjilan, Kosova

e-mail: [agron.uka@rks-gov.net](mailto:agron.uka@rks-gov.net)

**Abstract** The issue of suicides is a socio-pathological deviant phenomenon quite widespread on the contemporary world as such, which presents a state of sickness in the society. A person inclined to commit suicide, and based on the data, turns to have less neurones in the brain, at a specific location situated above the eyes and is in lack of serotonin transporters. In such circumstances, the suicide means also an incapacity of the individual for integration into the social environment. The suicide as a phenomenon in the society presents as a quite complex phenomenon and as a quite widespread phenomenon in the contemporary world, as a deviant phenomenon, as an act of leaving the great and precious life and embracing the death. In order to go further into the details of the issue of suicide, one needs to use and analyse the general social and pathological circumstances and in particular the planning, reasons, true motivations behind the suicides in order to finally come to a conclusion in relation to the causes of suicide as a phenomenon which burst heavily throughout the globe. Even though, in the first sight, each suicide resembles as a deeply personal act by destroying one's life, the suicide, in such circumstances, questions the essential value of the society – the human life. It makes such a decision a social deviance as well as a social problem, due to the undertaken measure-causes and consequences that have a deep social meaning.

**Key words:** Criminology factors, social, economic, socio-pathologic, motives, aims, warning signs of the suicide



# 11th International Conference

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# **Environmental policy and laws for biodiversity and nature in Republic of Kosovo**

Nexhat Balaj 1 , Hyzer Rizani 1 , Filloreta Balaj 2 , Llazar Haxhinasto 2

UBT - Higher Education Institution, Lagjja Kalabria p.n., Prishtinë, Kosovë,

Email:nexhat.balaj@ubt-uni.net

**Abstract.** My research aims at carrying out a comparative approach between Kosovo's environmental legislation and that of European Union, which is primarily based on four main pillars such as follows; air, water, climate changes, and biodiversity. Kosovo is continuously trying to implement and incorporate European norms and standards and to fully-adopt to European Union legislation being referred to as *acquis communautaire*. The concept related to environment is a multifaceted and highly elaborated in global level. Kosovo has new environmental legislation, created mainly during the last decade. This legislation is generally focused on alignment with EU standards because it relies on the same principles as European environmental. Despite fact that Kosovo is a small country, it is characterized by rich nature, landscapes, diverse flora and fauna. In this regard, the Law on Nature Protection, aims to regulate the system of protection and general conservation of nature and its values such as: protection, conservation, renewal and sustainable use of natural resources, in a state of natural balance.

**Key words:**Environmental policy, EU standards, Law of nature, biodiversity, Kosovo.

# Progressive Policy Innovations at the Local Government Level

Bardh Hoxha

University for Business and Technology (UBT), Kosovo

bh44092@ubt-uni.net

**Abstract.** This paper examines three recent policies at the municipal level in Kosovo, namely: an education reform in Kamenica that reorganized schools with the purpose of creating bigger classes from scattered schools consisting of very few students, a policy of free public transport for retirees in Prishtina, and a policy of public maintenance of living blocs of apartments in Prishtina. The policies were all progressive in their nature. They aimed to contribute to the emancipation of students by providing better learning environments and improving the living conditions of the retirees and citizens of Prishtina. The policies were encompassing, and social-investment oriented (Kamenica) or redistributive (all). All three policies emerged when left-leaning parties gained power for the first time. This means that democracy, through the means of political parties, is reflected in distributive politics. With the power of the left rising in recent years, this finding may indicate the direction that the policies can take in the years to come in other municipalities and at the national level. However, while institutions were successfully used to implement path-departing policies in a previously neoliberal-inspired context and despite various positive outcomes, not all policies survived. The local population and teachers mobilized against the reform of the municipality of Kamenica, and the politicization of this mobilization by electoral competition caused backtracking from the policy. Furthermore, none of the policies, despite positive learning, has diffused in other municipalities. These findings indicate that democracy does not necessarily lead to progressive reforms if actors do not commit to it.

**Keywords:** Local administration, Politics, Policy, Education, Free transport, Housing.

# **Ethnicity as a variable in war and challenge in the peace**

Mentor Tahiri [1] and Arian Kadriu [2]

1 State University of Library Studies and Information Technologies, Sofia 1784,  
Bulgaria

2 University for Business and Technology, Prishtina 10000, Kosovo

**Abstract.** In most modern wars, ethnic issues appear to be one of the main instigators or at least a constituent element of war. In this respect, any distinction can be hardly made when considering parts of the world separately. Ethnicity, whether as political ambition or intolerance, turns out to be many times clearer in mobilizing the masses than most other factors. The instrumentalization of various goals through ethnicity has taken on dimensions whose consequences dilute the multiethnic functioning of the institutions even if peace is achieved meanwhile. Ethnicity as a desire to dominate becomes a burden for several segments of political and social life and a challenge for the conceivers of national security. Societies need to find a concrete solution to properly address the demands when they are justifiable. The lack of a political solution has usually produced conflicts and even armed ones. Therefore, ethnic conflicts, even in the form of animosities, remain a serious threat to national security itself.

**Keywords:** Ethnicity, variable, security dilemma

# The trade war between the U.S. and China and its impact on the E.U.

Dritero Arifi 1 , Ngadhnjim Brovina 2 , Hajdi Xhixha 3

1 University for Business and Technology, Pristina, Kosovo (e-mail:dritero.arifi@ubt-uni.net)

2 University for Business and Technology, Pristina, Kosovo (e-mail:ngadhnjim.brovina@ubt-uni.net)

3 University for Business and Technology, Pristina, Kosovo (e-mail:hajdi.xhixha@ubt-uni.net)

**Abstract.** This paper examines the timeline of the trade war between the United States and China and the causes and potential implications. Besides this, the paper's primary focus is on depicting this war's impacts on the European Union. The report identifies both economic and political motives for starting a trade war on both sides. However, most importantly, it illustrates both sides of the coin when the war is considered from European perspective. The author investigates the economic and realist policies underpinning the trade war to find these effects using conceptual insights from the nationalism literature.

**Keywords:** Trade War, International Trade, The European Union, China, United States, economic sanctions

# Political Inequality and Communism Nostalgia,

Tea Hodaj

**Abstract.** Communist dictatorships in Europe fell prior to the new millennium and the new democratic setting resembled the infamous Promised Land. But, the establishment of democracy was and still is, rooted in political inequality for some of the ex-authoritarian countries of Europe. This paper aims to look upon the patterns linked to political inequality which have been strengthening the so-called 'communism nostalgia'. By using the theories of Political Psychology and Transitional Democracy, the author aims to highlight the trends in the political behaviour of party leaders and populations of ex-authoritarian countries of Europe, accompanied with a statistical case study of testimonials gathered from the Albanian people. It is of importance here to differentiate the ideological liking of Communism and the nostalgia of former dictatorships. The major hypothesis of this paper claims that due to high levels of political inequality, the dissatisfaction of the people with the democratic regime has risen and as a result, people feel more nostalgic of the troublesome sense of security offered by past dictatorships. Political inequality is rooted in wrongly conducted policy making, corrupted systems, authoritarian-like behavioural patterns of political leaders and all the other characteristics of fragile democracies. It is of importance to look upon the mechanism that uphold the dissatisfaction of people through the lenses of political psychology, dominant party systems and violations of Human Rights. Is Communism Nostalgia an end or a goal?

**Keywords:** Communism Nostalgia; Political Inequality; Central-Eastern Europe; Political Psychology; Transitional Democracy

# “The right to cultural identity, the balance and elements of consociational democracy”

Flora Kadriu

UBT – Higher Education Institution

flora.kadriu@ubt-uni.net

**Abstract.** The motive for compiling this paper is the attempt to research the topic of consociational democracy (some authors call it consensual democracy) or more generally - democracy in multicultural societies. Firstly, the paper aims to examine the topic of cultural differences in politics, closely related to its legal roots and sources - such as: classic civil-political rights as the oldest human rights, individual rights or rights from the first generation (she - liberty). The main challenge was researching the connection between consociational democracy and individual rights. Namely, deriving the practice of consociational democracy from individual human rights and freedoms (supplementing them with a set of minor rights), but not from the collective concepts of communitarianism. This connection of consociational democracy with individual rights represents exactly the intricate BALANCE (which is a big, frequent and special problem) between the protection of individual human rights and collective cultural rights, which are combined in the political system of this democracy. As difficult as it is to establish and maintain such a balance, it is necessary, .i.e the key to a stable and effective consociational democracy.

**Key words:** consociational democracy, cultural identity rights, individual rights, balance – the connection between consociational democracy and individual rights.

# **The Impact of Social Factors on the (dis) Harmony of Kosovar Society**

Ass. Prof Driton Maljichi

Institute for Sociological, Political and Juridical Research (ISPPJ), University "ss.  
Cyril

and Methodius" Skopje d.maljichi@isppi.ukim.edu.mk

**Abstract** Kosovo, one of the youngest countries in Europe with a rich history of the communities in Kosovo and has a character of multiethnic state with officially recognized minorities of Serbs, Bosniaks, Turks, Ashkalis, Egyptians, Gorani, and Roma. There is a lot of literature on the ethnic and demographic conflict in Kosovo between Albanian Kosovar and Kosovo Serbs, and it swings between Serb and Albanian perspectives. Almost every point made by one side is contested by the other, both sides making the similar argument in different ways at times. This research aims to detect social factors that influence the breakdown of inter-ethnic relations particularly between Albanian Kosovar and Kosovo Serbs. This research methodology is based on secondary data from published studies. The factors that have been detected and analyzed in this research are historical perspective, association of municipalities and new national identity. Belgrade continues to have a strong influence on Kosovo Serbs citizens and their fate is linked with the final status between Kosovo and Serbia. Rebuilding of trust and reconciliation between the two communities are fundamental prerequisites for inter-community peace.

**Keywords:** History, Association, New Identity



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# Critical analysis of prime minister rama's political discourse and its influence on the media

Anila Prethi

Journalist, Durres

[anilaprethi@gmail.com](mailto:anilaprethi@gmail.com)

**Abstract.** Albanian journalism has gone through difficult development stages, trying to get the point where the truth and journalist's dignity are untouchable. Despite the transition, censorship and political pressure, have been and continue still to be, the cause of a subjective media and loss of public trust. However, the last challenge that is added to journalists in Albanian media today, is the insult and bullishness that is done by the prime minister, when he is surprised by difficult questions or their criticisms. However, the journalist's task is to ask questions and the politician's task is to answer them, the prime minister often behaved unfairly, and has excluded them in attending press conferences. This paper aims to examine, through critical analysis of Prime Minister Rama's political discourse, his influence in the media and public opinion.

**Keywords:** censorship, political pressure, subjective media, bullishness, media discourse, public opinion.

# Different gender approaches towards “fake news”

Prof. Dr. Özcan YAĞCI

Assoc. Prof. Dr. Çiçek COŞKUN

Assoc. Prof. Dr. Ceyda KULOĞLU

**Abstract.** In today's world, traditional media goes alongside with the new media and the most complicated issue about this situation is the existence of “fake news”, which is a widespread problem in all countries. Digital media allows “fake news” to spread rapidly like a virus. Although the reasons to use “fake news” differ according to the situation, it has negative consequences wherever it is used. There are different types of “fake news” such as parody/satire, wrong association, distorted content, wrong context, fake content with fake id, manipulated content and fake content. With the nature of the new media, the audience is considered as active and heterogeneous different than the traditional media where the audience is considered as passive consumers that are easy to manipulate. In other words, nowadays, the audience is evaluated as conscious consumers who are also capable of media literacy but still because of the news bombardment the audience has to deal with the reliability of what they face. Although there are some recent studies on “fake news” in academia, it is obvious that the gender differences about the news consumption is inadequate. As Poindexter and Harp (2009) mention, women are more interested in daily life, such as celebrity profiles, good luck stories, etc. which are labeled as “soft news” when they consume news, whereas men are interested in hard political issues, such as politics, political leaders, etc. that is named as “hard news”. The aim of this study is to evaluate gender differences in news consumption and their perceptions about fake news. In order to analyze gender differences on this issue, specific fake news examples on the Twitter platform will be used and with content and discourse analysis techniques, how women and men approach differently to the examples will be interpreted.

**Keywords:** News, Fake News, new media, gender differences,

# Media reporting on energy and environmental issues - freedom of expression

Dafina Lata

UBT – Institucion i Arsimit të Lartë, Lagjja Kalabria, 10000 p.n., Prishtinë, Kosovë

[dafina.lata@ubt-uni.net](mailto:dafina.lata@ubt-uni.net)

**Abstract:** Taking into account that events or topics in the field of environment and energy are in the interest of the public. Then, there is a need to investigate how much media space is being given to the media. When we consider that the media attention in Kosovo pays attention to topics from politics, economy, security. But, even when events from the field of energy and the environment are dealt with, they are only in cases when some development occurs and then all the media broadcast news on such topics, but not daily reports. Therefore, in this scientific research, it will bring the data about the reports that show how much the media are interested in reporting on these topics. Then, the challenges journalists face during field research. In addition, the data of a monitoring done by national televisions in Kosovo within a month will be included, as to how much news they have brought about energy and environment issues.

**Keywords:** media, reporting, news, research, television

# Respecting children's rights in audiovisual media (tv) in kosovo

Edona Sulejmani

University for Bussines and Technology, Faculty of Media and Communication,

Lagjja Kalabria 10000 Prishtinë, Kosovo

[edona.sulejmani@ubt-uni.net](mailto:edona.sulejmani@ubt-uni.net)

**Abstract:** After the last war in Kosovo, children have been the most discriminated and disrespected categories. Through print and electronic media every day we see cases of disrespect for children. Even based on the surveys and analyzes of organizations that deal with children's human rights, such as UNICEF, Kosovo is very low in the ranking in terms of children's rights. All of this has an audio that, based on these analyzes that I have made, I have found that the rights of children are respected in the media. I have analyzed the program for children in all the different channels of Kosovo such as: RTK, Klan Kosova, KTV, RTV21, TV7, TV Dukagjini and I have seen that there are very few shows for children and in most cases those shows are not educational. but more entertaining, musical, cartoon, etc. I have an important future conclusion that in Kosovo there is very little for children and society should be aware that it is the future of this country and we should not understand once and for all that children should be respected to the maximum of every person. we know that Kosovo belongs to young people and they are the hope of this country. Therefore, not only the media, but all of us adults should do more for this category. I have included all these in the works first by defining this problem and analyzing it in detail and then through the methodology and results of the study that has been done in the conclusion of the special data which are specified through graphs and tables. I have tried to carry out these analyzes as much as possible according to the answers with the most suitable countries in the world and I have drawn conclusions about what society should do in our media that are children of these centers which are in their respect.

**Keywords:** rights, children, media, television.

# Effects of change in public communication in political campaigns via new media

Ejup Gojnovci

UBT - Higher Education Institution, Kalabria Quarter, 10000 n.n., Prishtina, Kosovo

[ejup.gojnovci@ubt-uni.net](mailto:ejup.gojnovci@ubt-uni.net)

**Abstract** Public communication via new media is also changing the political communication. As a result, the new media are playing an increasingly important role in political elections in Kosovo as well, where the penetration and quality of the Internet is at very high levels. Even though political communication in Kosovo through such media is new compared to more developed countries, it has become rather dominant compared to the traditional media. This is due to several reasons, and among the most important one is the easier reach of wide audiences, even beyond the borders of the state, where potential voters live, and in every zone that may be, even in the deepest rural ones. Digital communication platforms have become prominent while this research focuses only on the social network Facebook, as the most popular social network in Kosovo, with over 1.1 million active users. This number constitutes a useful crowd for politicians to fish for votes, causing significant changes also to the design of campaign strategies of political parties and candidates separately. However, the impact is reflected both in media coverage and in voter engagement which crosses the link from online to offline communication. The thesis examines the effects of change in public communication in political campaigns. It elaborates the ways in which the new media provide the potential of mass communication, either in comparison to the traditional ones or even the possibility of intercommunication in full interactivity between the parties, in this case politicians and voters. Moreover, it highlights useful features in terms of the change of communication via Facebook, in form, function, and content as well. The ease of identifying the audience, making it possible for politicians to choose whom they address, whether by age, location, gender, cultural orientation, special problems of a region, etc., are also presented, intertwining and examining the effects on interest, knowledge, engagement and participation of voters in this relation of communication.

**Key words:** Politics, communication, Facebook, Kosovo, new media, old media

# The development of technology, internet and media market in kosovo

Ferid Selimi, Naser Rugova

Faculty of Media and Communication, University for Business and Technology,  
Pristina, Kosovo

Ferid Selimi,ferid.selimi@ubt-uni.net;NaserRugova, naser.rugova@ubt-uni.net

**Abstract:** Traditional media, namely print newspapers, during the time of the development of Internet and social media have changed the form, appearing only as online media and stopping their print activity. As such, they try to find survival by posting news online on social media, as the only way to continue and keep the contact with the audience. All the data show that the main media circulation today is produced by social media. In order to reach the findings, respectively the results for this topic, there are used the method of interview, survey, monitoring, comparison methods and media analysis in Kosovo. Through the analysis it is evaluated the way the text was constructed, journalistic ethics and correctness. As a source of information we had online media. The results of the study confirm that in Kosovo, with the development of technology and the Internet, the printed daily newspapers disappeared and the greatest liability of information remained to online media, which as one of the main source of information have the current developments in Kosovo, using also various pronunciations taken from online platforms such as Facebook, Instagram and Twitter.

**Keywords:** audience, digital, information, news, online media

# **Radio Broadcasting and the Internet: The Case of Kosovo**

Prof. Ass. Dr. Gjylie Rexha

UBT College for Business and Technology, Prishtina, Kosovo

**Abstract.** Radio has emerged as the mass media that utilizes the technologies to reach and communicate with audiences. In the era of internet, it uses networks to transform broadcasting and to reach fragmented audiences in different platforms. This paper focuses in the state of radio in Kosovo, as a developing European country, characterized by young audiences and high level of internet penetration, but where most radios are still based on frequencies and do not use the opportunities of the Internet to disseminate programming content. Through direct observation and in depth interviews, paper discusses the reasons and consequences of the delay in adapting radio in Kosovo to new media realities created by the Internet. The paper concludes that the process of transforming radio broadcasting in Kosovo, is in its infancy. Most radios, use Internet to stream live programming from frequencies, but only few programs are offered in formats tailored to web audiences.

**Key words:** Radio broadcasting, Kosovo, audiences, web-audiences, podcast



# An approach to the situation of media freedom in albania and the balkans

Heldi Kodra

French-Albanian College *Victor Hugo*, Tirana, Albania

e-mail: [kodra.heldi06@gmail.com](mailto:kodra.heldi06@gmail.com)

**Abstract.** Media freedom constitutes one of the main criteria imposed by the European Union for the accession of countries similar to Albania in the European family. It is related to basic human rights and freedom. Nevertheless, the Balkans remains problematic in this aspect and countries of this region have shown incomppliance of this right. Throughout last years, there have been visible changes, mainly in the way how the profile of media and journalist is perceived and the importance of the journalistic figure in actuality. Countries of the Balkans, including the non-members countries of the Western Balkans (WB6), but also other countries such as Bulgaria, Greece and Romania have suffered regress in world indexes as per media freedom and integrity, which was also reinforced during the isolation of 2020 due to the pandemic, when media had key role for massive information of the public. The pandemic affected more and more the control of media from political factors and improved partisanship within media outlets, something that negatively affected the quality of the information shared to the public in a critic situation of isolation. In this article we will analyse the factors that have brought to the actual situation of media freedom in Albania and wider.

**Keywords:** media, press, media freedom, journalism, actuality, Albania, the Balkans

# The role of the Republic of Albania (mother country) towards the Albanians in the Republic of Serbia

Ilir Zylfiu

Faculty of Media and Communication, University for Business and Technology,

Pristina, Kosovo; [ilir.zylfiu@ubt\\_uni.net](mailto:ilir.zylfiu@ubt_uni.net)

**Abstract.** The term "mother state" is intended to define the relationship between a state and the citizens of another state, but who are of the same ethnicity. The issue was raised in the form of a question about what approach the mother country should have towards its own ethnic group in other countries. What is known is that until today there are no established rules on the behavior of the mother country towards the part of the ethnic group in the resident country (the country where they live). In international theory and practice, it is clear that it is the duty of the resident state to provide conditions and guarantee the rights of all citizens regardless of the differences they may have. However, international practice has shown that the mother state has expressed its intentions to intervene in the resident state with the aim of dignified treatment of its own ethnic group. In this paper, the role of the Republic of Albania (the mother state) towards the Albanians in the Republic of Serbia will be addressed. In general terms, the paper deals with topics of historical and current nature. Special attention will be paid to the role of the state in relation to its own ethnic group, which is located in the neighboring state. The possibilities that our health can contribute to improving the status of our ethnicity will be addressed.

**Keywords:** political pluralism, political representation of minorities, electoral system, constitution.

# **Social media and ethics**

## **(case study - the sexual assault of an 11-year-old in kosovo)**

Dr. Isida Hoxha

Msc. Ismet Kallaba

University of Shkodra “LuigjGurakuqi”

**Abstract.** The development of new media in relation to traditional media was accompanied by a range of dynamics that can be categorized positively if we refer to the use of two-way communication, which allows the creation and exchange of content by users. Creating a more democratic media space, interactivity, networking, as well as changing the hegemonic approach to the resources used are positive vetoes of how social media works. The rape of a minor in Kosovo, by a group of young men, in August 2022, had a wide echo in Albanian media and certainly on social media. The event itself, and news of this event, brought reactions from society to the organization of protests in different cities, as well as the resignation of some officials from their work. One of the problems faced not only on Albanian social media concerns ethics, ethical principles, which shouldn't be classified as a matter of a theoretical level, but as practices to be addressed in the field of journalism. In Albania, the “Ethical Media Code” published in 2006 is the main guide in relation to ethical media reports. In addition, the development of new media required a code to include the relevant dynamics, so the “Journalist Ethics Code” and “Ethical Guidelines for Online Journalism”, were published by the Albanian Media Institute. This case study studies the role of social media with the respective qualities, as well as ethical issues such as used language, sensation, privacy, etc., therefore the research question is: What is the role of social media in covering and dealing with this event? The study relies on the social platform Facebook, because it remains one of the most followed platform in Albania.

**Key words:** social media, minor, ethical issues.

# Are fake news ( disinformation) ethics’ most bigger enemy in professional journalism in kosovo?

Msc. Musa Sabedini

Faculty of Media and Communication, University for Business and Technology,

Pristina, Kosovo

[musasabedini@hotmail.com](mailto:musasabedini@hotmail.com)

**Abstract:** Are fake news (disinformation) Ethics’ most bigger enemy in professional journalism in Kosovo? To understand more precisely which are fake news or which news is fake and which one is real, then of course we need to understand how to write a real and precise news. Fake news are a challenge and a serious problem for online medias in Kosovo, counting here the part of Ethic which is stuck and is a problem itself. Kosovan online medias, I believe most of them have a deficient and non-professional working staff, are being influenced from the fake news phenomenon, not missing any minute of the time to verify that news, that case, that chronic, video or photo. In professional and ethic aspect, it is sad when you see fake news, news that become viral and are not verified by newsroom. In Kosovo, even online medias that have a great indication in public opinion sometimes make fake news and serve them to us. This phenomenon needs to stop, we have to make everything that newsrooms of these online medias can understand that fake news are not good for public health, they create mental and emotional presion to a part of the people that is already indicated and victimized from these not-verified news. Newsrooms that share fake news, first need to understand the importance of making a real news. It is difficult to know the difference of fake news, without knowing how to make a real one. For me, it is important for portals to become aware in professional aspect, to create groups of journalists and experts to stop the phenomenon of photographs, videos and other materials, that in fact damage the responsible journalism. There are portals and online medias that are in the good way of making a real professional journalism, of a journalism where ethic dominates, ethics’ and well-behaved codes are respected, where also the right of reaction is respected. An agenda with some criterions and enough material explaining the fake news, would be welcomed in every kosovan newsroom. It is time that new journalists and the ones with experience to read and study more about this case that has taken world scale and has a huge indication in society. Kosovo is also involved in this ‘deadly’ virus for professional journalism. Online medias in Kosovo need to understand the reliability and the damage that fake news cause to public and readers of different layers.

**Keywords:** Fake news, kosovar portals, awareness, ethics.

# Chaotic reading of chaos

Safet Zejnullahu

UBT – Institucion i Arsimit të lartë, Lagjja Kalabria, 10000 p.n., Prishtinë, Kosovë

[safet.zejnullahu@ubt-uni.net](mailto:safet.zejnullahu@ubt-uni.net)

**Abstract.** Between the slow traditional media and the light-speed media of the Internet, I don't think we choose the latter. But to what extent can we trust her? Even further, we want to read a news, which is offered to us as the latest, but in fact we do not find such content. How many times do we look for the source of an important piece of information and find it lacking. Instead of a column structure, in a column of titles we find news from politics and advice on how to clean the bathroom more effectively. We search for news and read advertisements! When a politician is suspected of breaking the law, we learn all about him, when a criminal commits his next crime, we find him with initials! A soccer team is leading by two goals at the end of the first half. The news with this title always attracts us. But when the game is over, that team has lost the game. But most of the time you don't find the news. A more vocal politician becomes public as a family member, even though he is doing propaganda. But the internet media needs news, it doesn't matter what news! We take comfort in the idea that the new media is in transition and laying the foundations of professionalism. But how long should this last?

**Keywords:** media, internet, chaos, column, transition

# MANIPULATION OF THE PUBLIC

Safet Zejnullahu

UBT – Institucion i Arsimit të lartë, Lagjja Kalabria, 10000 p.n., Prishtinë, Kosovë

[safet.zejnullahu@ubt-uni.net](mailto:safet.zejnullahu@ubt-uni.net)

**Abstract.** Internet media has given a lot of space and media activity. Beyond the rules, even unregistered media informs the public. The mechanisms that control the media are more numerous than ever, but also more powerless than ever. We are at a time when some media platforms are not concerned with researching and writing news, but with stealing and selling news. It can be called paramedia rather than media. The registered media can be controlled some how, but the unregistered ones, how can they be controlled? It is the age of the Internet media and manipulating the public, often more than informing, turns out to be the primary goal of the media. But at the same time, after an understandable period of media adaptation to technology, it is time to set the rules. First professional and then sanctions form is takes made with the aim of manipulating and misinforming the public.

**Keywords:** media, paramedia, manipulation, professionalism, control

# Online media in kosovo as pandemic allies

Saranda Krasniqi

University for Business and Technology,

Pristina, Kosovo

saranda.[krasniqi@ubt-uni.net](mailto:saranda.krasniqi@ubt-uni.net)

**Abstract.** The purpose of this paper is the analysis of electronic media, more precisely the role of portals at the time of the Covid-19 pandemic, during the two-month quarantine period. During that period, various news were published about the corona virus, but not always accurate and credible, which caused panic among the citizens and unnecessary fear. This paper contains many defects in reporting, followed by photos (screenshots) where it is seen that there was incorrect information of the public, and unverified information. In some cases, I have encountered inventions that did not exist, as some of these portals claimed that the vaccine against the virus exists and expressed their conviction that it has an effect, while doctors and the NIPH appealed for protective measures, distance and did not promise anything about this issue. In other cases, there has been news about the political situation in the country mocking the corona virus, followed by spelling mistakes. Reporting on the pandemic has been necessary and even useful, but journalists should always show a high degree of professionalism by avoiding the publication of unofficial information, unsupported by experts in the field, and inappropriate photos that cause confusion and panic in the audience.

**Keywords:** Media, portals, accuracy, verification, coronavirus, objectivity

# “Fake news” and the psychological impact on Kosovo’s society”

Violeta Zefi<sup>1</sup>&Marigona Xhigoli<sup>2</sup>

<sup>1,2</sup>University for Business and Technology, Faculty of Psychology & Faculty of Media and Communication, Lagjja Kalabria 10000 Prishtinë, Kosovo

{ violeta.zefi, marigona.xhigoli }@ubt-uni.net

**Abstract:** The main aim of this paper was to analyse the influence of “fake news” on the psychological well-being of the citizens of Kosovo. To achieve this goal, the quantitative method was used, as the main methodological approach. The research included a sample of 109 participants, where 58.7% of respondents are women while 41.3% are men. This research data were collected through the distribution of the questionnaire on social media. The results of this research showed that citizens are influenced by the information they read in the media. Online media, known as “portals” are the ones that most influence the psychological well-being of the citizens who participated in this research. Most respondents declared that they do not always trust the media in Kosovo and that the media publish a lot of fake news.

**Keywords:** fake news; psychological well-being; the media; information; Kosovo.



# Aspects of feminist discourse in albanian political communication

Votim Hanoli

UBT - Institution of Higher Education, Lagjia Kalabria, 10000 BC, Pristina, Kosovo

[votim.hanoli@ubt-uni.net](mailto:votim.hanoli@ubt-uni.net)

**Abstract.** According to Foucault, "... dealing with the discourse on human sexuality cannot be done without understanding the power-knowledge-pleasure relationship. For power to be functional, its exercise must be patient and mask or conceal a significant part of its operation. The longevity of power is proportional to its ability to hide the mechanisms it uses". The facts show that, in these three decades of upheavals and political changes, even political communication in Albania has known great changes, certainly with ups and downs, different tones and colors. Feminist discourse has tried to show that every woman, who is part of politics, can get out of those "frames" that have placed and labeled her and show herself in one way or another to prove that her own room for which Virginia Ulf spoke in 1928. This paper, through discourse analysis, aims to examine and highlight the way in which this type of discourse, i.e. feminist discourse, tries to establish balance in a rather difficult, harsh and wild as is the political terrain related to other aspects such as power, rhetoric, dominance, etc.

**Keywords:** political communication, feminist discourse, power, political opponent, rhetoric.

# The linguistics challenge in electronic media

Dr.sc. Xhevahire Millaku

Faculty of Media and Communication, University for Business and Technology,

Pristina, Kosovo

[xhevahire.millaku@ubt-uni.net](mailto:xhevahire.millaku@ubt-uni.net)

**Abstract.** Social network are playing an important role or it's opposite in the misappropriate language. Language usage and social search can be used as power participation of communication and judgment to find information of general interest but also answers for specific questions. Dritëro Agolli has said: "Language culture is essential for every writer, for every journalist, for every intellectual, for every human. The one who honors language, honors homeland. Meticulousness, clarity, simplicity are so necessary for every writer as work tools for every worker." Avoiding reading and studying books, magazines, newspaper etc., but also the society's transition to fast and short reading in those of social communication networks have started partially to build informative concepts but also the way of misappropriating or avoiding the standard Albanian language. Usage and misuse from social network can be seen in all levels of formal and informal communication. Words usage and unreasonable and meaningless sentence, but also wrong on phonetic, morphological and syntactic aspect can be seen in a high degree of carelessness and language misappropriate. This study will present some fragments and analysis, but also the linguistic role of words and sentences used in social networks by our educational institutions or even by various public figures and up to those of young age communication.

**Key words:** Challenge, language, the user, electronic media.

# **11th International Conference**

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# The interdisciplinary learning educational ecosystem: A classroom 4.0 perspective

Dr. Sc. Edmond Hajrizi

Dr. Sc. Alma Lama

University for Business and Technology

[ehajrizi@ubt-uni.net](mailto:ehajrizi@ubt-uni.net), [alma.lama@ubt-uni.net](mailto:alma.lama@ubt-uni.net)

**Abstract.** Education is facing learning paradigms and the importance of an educational ecosystem in universities represents a key role for the development and commercialization of scientific and technological development. An ecosystem in education can be efficient and effective if the components of innovative education, laboratories and interdisciplinary mechanisms are taken into account. The educational ecosystem of interdisciplinary learning can serve as an innovative platform that can regulate the teaching and learning approach since the teaching methodology is based on systems analysis, on individual and group competencies. Therefore, Classroom 4.0 perspective comes as a revolution in education where focuses on smart technology, artificial intelligence and robotics which prepares students for the industry market where these cyber systems are used and are mandatory in the near future.

**Keyword:** education, interdisciplinary, ecosystem, classroom 4.0, mechanism, industry.

# **The impact of pedagogic theory in educational psychology**

Author 1: Dr.Sc. Alma V. Lama

Author 2: Dr.Sc. Denis Çelcima

University for Business and Technology  
Prishtina, Kosovo

## **Abstract**

Logical education is one of the effective factors in the learning process. In general, teaching English requires a commitment but also a proper organization from the teacher and additionally the student. In order for a student to have a successful achievement in learning English as a foreign language, he must be offered a preparation, first by the teacher when he or she must have the necessary information and knowledge from the new theories of teaching means in terms of education but a teacher must also be psychologically prepared. In this paper, we examine pedagogic theory in educational psychology and the role of different learning methods in the process of thinking, memorization, intelligence, motivation, and the role of teachers and students in transferring learning all of this to conclude that each teacher must first know the student from a psychological point of view before teaching him. The study is conducted in seven elementary schools in Kosovo, where 14 teachers and 140 students aged 10-12 years were the instrument of this study. The study focuses on the role of internal and external psychological factors in the process of learning a foreign language. Knowing the role of these psychological factors stimulates the desire to use language and explains the role of pedagogical theory in educational psychology. The study shows that teachers who use psychological knowledge are more successful than teachers who are focused and oriented only on following the textbook content.

**Keywords:** teaching, learning, EFL, pedagogy, psychology, methods

# Architecture and Cinema: Images of Vienna in International Thriller and Action Films, from 1949 to the Present

Lothar Tschapka<sup>1</sup>

<sup>1</sup> University of Vienna.

Home address: Corvinusgasse 3/1, 1230 Vienna, Austria

lothar.tschapka@univie.ac.at

**Abstract.** This paper examines the role of architecture and the display of urban spaces in international thriller, suspense and action films shot in Vienna from post-WWII to the 21<sup>st</sup> century. Special emphasis is placed on the portrayal of different parts of the city and architectural styles, particularly the contrast between (sometimes) “decaying” historical neighbourhoods and their modern(ist) counterparts, as well as between urban and suburban locations. The films under analysis here include Carol Reed’s classic *The Third Man* (1949), the French cold-war thriller *Avec la peau des autres* (1966), excerpts from the *James Bond* and *Mission: Impossible* series, as well as Liliana Cavani’s scandal-arousing 1974 exploitation thriller *The Night Porter*.

**Keywords:** Architecture, Cinema, Urban development, Vienna, Thriller, Action film, Cold war

# **A Professional Learning Model for Building Leadership Capacity in Middle Level Educational Leaders Across the World**

Author: Shannon Bruce Ramaka ED.D

A project in collaboration with the VisionaryEd, LLC team members: Dr. Megel Barker, Rebecca Dahl, Dr. Robyn Conrad Hansen, Ana Cristina Medeiros, Ines Schreiner, Dr. Jeannette Vos, and Ashley Wu. With Legacy School, Bangalore, India  
May 1, 2022

VisionaryEd Buddy Coaching Module 1

**Abstract.** Difficult times can birth innovation out of necessity. In the sector of education, the Covid-19 pandemic birthed new opportunities for those who leverage technology for learning. Not everyone enjoyed or benefited from these experimentations in technology and teachers and students were stretched and stressed to adapt quickly as they navigated learning new skills while also trying to understand what content was essential and relevant. However, a dynamic learning tool evolved and new professional teams such as VisionaryEd, LLC, are using it to make a positive difference in our world. This new transformational tool is made possible through the creative combination of collaboration, coaching, and a virtual meeting space.

# **Informal Learning - Watching Educational Youtube Videos**

Duli Pillana

**Abstract** Informal learning with youtube videos is a spontaneous process that occurs outside the class and does not follow the curriculum, nevertheless, students are attracted to interactive digital learning. They spend a great time watching youtube video activities, and they master the material well. Informal learning occurs in different forms and it differs from formal learning and non-formal learning. Non-formal learning follows a curriculum, but what happens outside the classroom is short-term and voluntary; formal learning follows the curriculum and it proceeds face to face in the classroom or virtually through an educational institution. Informal learning could take various forms such as Self Study, Watching Videos, Team Building Activities, Gamification, Podcasts, book club, room escapes, etc. The paper's main purpose will focus on informal learning concerning watching videos or youtube videos, particularly youtube videos. The successes of the learners in informal learning attract a great engagement of participation in various learning activities. Informal learning (watching educational youtube videos) provides great inspiration to learners when they deal with formal learning in the context of content knowledge and study habits.

**Keywords:** learners, informal learning, videos, spontaneous process, curriculum



# CONTEMPORARY LEARNING MODELS

Fariz Farizi PhD Qufli Osmani PhD

UBT College - Higher Education Institution, Kosovo

[fariz.farizi@ubt-uni.net](mailto:fariz.farizi@ubt-uni.net)

[qufli.osmani@ubt-uni.net](mailto:qufli.osmani@ubt-uni.net)

**Abstract** Contemporary learning models are creative didactic solutions that have appeared and appear more often as a reaction to bad and unstable solutions determined in pedagogical practice. The main purpose of this paper is to show you the models of contemporary learning, how should teachers use and when should they use contemporary learning models and what are contemporary learning models. The paper consists of several models of contemporary learning including: individualized learning, programmed learning, inclusive learning, integrated learning, interactive learning and problem learning.

**Keywords:** Individualized learning, Programmed learning, Inclusive learning, Integrated learning, Interactive learning and Problem learning.

# A Study On The Effect Of Green Elements Arrangement And High Albedo Pavement On The Outdoor Microclimate And Thermal Comfort

<sup>1</sup> Qingchang HE\*, <sup>2</sup> Andras REITH

<sup>1</sup> Marcel Breuer Doctoral School, Faculty of Engineering and Information Technology,  
University of Pécs, Boszorkány u. 2, H-7624 Pécs, Hungary

<sup>2</sup> Department of Engineering Studies, Institute of Smart Technology and Engineering,  
Faculty of Engineering and Information Technology, University of Pécs, Boszorkány u.  
2, H-7624 Pécs, Hungary

\* Corresponding author, e-mail: [arw16qh@163.com](mailto:arw16qh@163.com)

**Abstract:** Microclimate and thermal comfort design are increasingly valued by urban designers in the context of urban warming because they can provide fundamental decisions on the development of comfort-enhancing solutions aligned with the project vision in the early stages of the project. This study is dedicated to exploring the impact of different arrangements of green elements and the combination with different pavement materials on the improvement of microclimate and thermal comfort. Study found that keeping a planting spacing of 5 meters between each tree to ensure the canopy does not overlap with each other could bring relatively consistent wind speed and provide more extent of cooling areas to alleviate outdoor heat stress at the hottest time point. Although the high albedo pavement materials did not prevent the emergence of outdoor heat stress, they somewhat weakened this phenomenon. In some cases, it could reduce the heat stress levels to a moderate range.

**Keywords:** Urban Design, Microclimate, Thermal Comfort, Green Elements Arrangement, Pavement Materials

# ' The correlation of high school profiles and students' choice to enroll in and their future career prospects

Dr.Sc. Eglantina Bilalli<sup>1</sup>, Dr.Sc. Donjete Latifaj<sup>1</sup>

[eglantina.bilalli@ubt-uni.net](mailto:eglantina.bilalli@ubt-uni.net)

[donjete.latifaj@ubt-uni.net](mailto:donjete.latifaj@ubt-uni.net)

**Abstract** Career choice is an important decision that youngsters have to make. The decision is not supposed to be made after finishing high school since high school normally is the crucial peak where this decision has to be made. Many high school students start thinking about their future careers at very early stages, but whether they make the relevant decision and the appropriate link between the high school profiles the students choose to enroll in and their career prospects are in question. Most people need some preparation before applying for university studies, but in the real life there seems to be a lack of awareness by the students to better explore their interests, instead, they register in any school without making the appropriate link to their future career (Torpey,2015). Choosing a career path is a huge part of a young man's or woman's life. The career path students choose, will affect how they will live the rest of their life. A lot of students go through high school and college without knowing what career path they want or are good at. Before students can pick a career path they need to experience what that career is like and what it involves (Fizer, 2013). As the labor market becomes more specialized and economies demand higher levels of skill, governments and businesses are increasingly investing in the future of vocational education through publicly funded training organizations and subsidized apprenticeship or traineeship initiatives for businesses (Kelly, 2011).

**Keywords:** career prospects, career path, high school, labor market.

# **What is the purpose of school? Why teachers hesitate to do their job, and call it “ spoon- feeding”.**

MSc. Blerim Sherifi

**Abstract:** The aim of this traditional presentation is to bring to the audience, teacher trainers, secondary teachers the purpose of today's educational system. How much we, teachers know about our role, responsibility, task and holy mission towards the future generations? Why do some teachers refuse and become lazy to explain things, give instructions and call it as a "spoon feeding". Over and over the years there has been a debate about the purpose of school. By this traditional presentation which is dedicated to teacher trainers, secondary and primary teachers, I want to bring closer to the audience the role of teachers in today's educational system. Therefore we should be aware of our purpose as teachers. In addition in the last two years we, teachers from all over the world had to go through hard times, very stressful situations, do a lot of changes, innovations, modifications and teaching variations and transformations. It was not an easy thing for none of us, we had to change ourselves lot in order to adapt the conditions minimize confusion/frustration, provide a warm environment for very student in class and all these can be achieved by modeling, role play, using different hands on activities. A good teacher should know his primary role in teaching process .Teachers should not refuse to make things simply and easier when it comes to teaching, as our role is not to let our students get confused or end up with no knowledge on a specific matter but our aim is to enforce, encourage, inspire and support them in learning. Teachers should get out of "comfort zone" and do their job.

**Keywords:** purpose, audience, teacher trainers, educational system

# Renewal strategies of high-density neighborhood for encouraging children's active living

<sup>1</sup>\*Kangwei TU, <sup>2</sup>Andras Reith

<sup>1</sup> Marcel Breuer Doctoral School, Faculty of Engineering and Information Technology, University of Pécs, Boszorkány u. 2, H-7624 Pécs, Hungary, and Faculty of Civil Engineering, Architecture and Environment, Hubei University of Technology, Wuhan, China

<sup>2</sup>Advanced Building and Urban Design, Hungary and Faculty of Engineering and Information Technology, University of Pécs, Boszorkány u. 2, H-7624 Pécs, Hungary

\* Corresponding author, e-mail:419176831@qq.com

**Abstract** As transformation of life-style in the cities increased risks for outdoor inactivity, overweight, and obesity among children, it is crucial to understand the correlates of outdoor activities and their daily built environment. This study focused on high density neighborhood and used investigation-oriented method to explore factors affecting children's outdoor activities and way of integrating outdoor activities into children's daily routine by providing multiple renewal strategies including building walking and cycling network, establishing linkage between indoor and outdoor space, creating community core and facilitating challenging activities. Authors hope to promote healthy and active lifestyle for children by providing a safe, comfortable and playful neighborhood.

**Keywords:** Children, Health, Outdoor Activities, High-density Neighborhood

# The application of smartphones in english language learning – some new insights

Simona Serafimovska<sup>1</sup> and Brikena Xhaferi<sup>2</sup>

<sup>1</sup>Faculty of Philology, University “Goce Delchev”-Stip, Republic of North Macedonia,  
simona.serafimovska@ugd.edu.mk

<sup>2</sup>English Department, Faculty of Languages, Cultures and Communications, South East  
European University, Tetovo, Republic of North Macedonia

**Abstract:** Nowadays, smartphones are promoted as a very important tool of modern technologies, which is perceived and practiced by the young population, in our country and in the world, in which a particularly significant place is occupied by university students. Within this paper, the meaning, role and application of smartphones in the study of the English language in the higher education system is highlighted. The application of smartphones in the higher education process is indisputable, but in the conditions of individual universities in the Republic of North Macedonia, it is insufficiently researched. The model case presented in this paper has the function of popularizing the smartphone among university environments as a tool for learning English by students as recipients on the one hand and professors on the other. The University “Goce Delchev” in Shtip was taken as a target, where students from different faculties would express their experience in the application of smartphones in the study of the English language. The isolated hypotheses and the series of questions that emerge as models from the approach of affirming these extremely significant modern tools trace the educational path in the contemporary study of the English language at higher education institutions.

**Key words:** New technologies, smartphone, higher education, English language learning

# Linguistic calques in the Albanian and German languages and their importance in learning the German language

Drita Xhemaili, PhD, Majlina Ferati-Muja, Msc

[www.ubt-uni.net](http://www.ubt-uni.net)

**Abstract:** The purpose of this research paper is the linguistic calques in the Albanian and German languages, which play an important role in the process of learning and acquiring foreign languages. Due to the fact that linguistic calques cannot be resolved or replaced with other synonyms, it makes learning a foreign language difficult and leads to the appearance of interference. Calques as more or less fixed connections in the lexical and grammatical field are phenomena that are reflected in an excellent form of discussion that has been going on for some time in linguistics in the morphological-syntactic and semantic field. In the paper, in the theoretical aspect, I try to give general knowledge about linguistic calques, types of these features and present the importance of linguistic calques in the process of foreign language learning and teaching. They turn out to be a multi-layered phenomenon that is examined based on different linguistic approaches and theories to make it more understandable. In this paper we try to argue that linguistic calques are in fact a neglected or even unknown aspect during the learning of German as a foreign language. The work is based on my dissertation (Xhemaili, 2018) with the support and mentorship of prof. dr. Emilija Bojkovska at "St. Cyril and Methodius" University - Skopje.

**Key words:** linguistic calques, Albanian language, German language, morphological-syntax, semantics, didactic

# Critical Thinking in Early Child Education and Care Level in Kosovo context

Syzanë Merovci

Pristina, Kosovo

[syzane.merovci@gmail.com](mailto:syzane.merovci@gmail.com)

**Abstract.** A kindergarten is not considered only a beautiful life experience for children, but also crucial preparatory stage for their future education. Experts of education believe that one of the most required skills to be taught besides the ability to understand, communicate and solve problems is the ability to think by reason, otherwise known as critical thinking. A vast amount of research highlights the importance of this skill in Early Childhood Education and Care (ECEC), because of its lifelong benefits. Although fully recommended in the current curriculum in Kosovo, this issue has never been given enough attention. Therefore, this study aims to provide an insight of teacher perception of critical thinking in kindergarten level and to identify the current practices adopted by teachers among kinder-garden children. A pool of 120 kindergarten teachers engaged in urban and rural areas constituted the sample of the study. A 22-item teacher survey has been developed and distributed to subjects. The survey was designed to indicate teachers' perception of critical thinking, their competence and application of critical thinking at kindergarten level.

**Keywords:** Critical thinking, early child care, kindergarten.



# Hybridization of the Albanian language in North Macedonia and its consequences in preserving its authenticity

Dr.Sc. Arbër Çeliku

[www.ubt-uni.net](http://www.ubt-uni.net)

**Abstract** The topic of this work will consist in pointing out Slavic powers in the past and state language (Macedonian) towards the Albanian people in recent decades in North Macedonia, which has influenced the birth of a hybrid Albanian language, even that not only in the use of certain words and expressions, but, first of all, also within the institutional communication. Practical examples observed in everyday communication testify to this, especially in communication with courts, police, state administration, and so on. The hybridization of the Albanian language does not only affect the censorship of its system, but also causes a degradation in terms of public communication, the cultural aspect and, first of all, the way of thinking and acting. In this case, the various factors of this ethnic-linguistic aisle such as those: psychological, historical-social, political and institutional will be addressed, but will also raise the possibilities of improving factual circumstances based on the legislation in force of the use of the Albanian language in North Macedonia, as well as attempting to raise collective awareness in the break from further ethnic-linguistic stigmatization.

**Key words:** Albanian, Macedonian, linguistic hybridisation, language power

# Effectiveness of Contextualization and Localization in Teaching

Honeylyn C. Bendijo, MAEd

Antonia Gueyndoline Despojo, EdD; Erlinda N. Calumpang, EdD; Maria Chona Z. Futralan, PhD

Cristina P. Calisang, EdD; Sofia A. Tundag, EdD

**Abstract** This study aimed to determine the effectiveness of contextualization and localization in teaching science of Grade IV learners. The 30 pupil respondents from Praxevilla Elementary School were divided into two groups. The first group was exposed to contextualized and localized module, while the second group was exposed to contextualized but not localized module. The study utilized the descriptive and experimental methods of research. The questionnaire, modules, and test papers underwent validation by experts to ensure content validity and reliability. The study utilized mean, weighted mean, t-test for dependent data, and Spearman's rank correlation for the statistical treatment of the data gathered. The study revealed that there is an increase in performance after the pupils were exposed to contextualized and localized modules. There was also significant difference shown between the pretest and posttest performances of the pupils and the posttest performances of the two groups of pupils in favor of those who are exposed to contextualized and localized module. It was also found out that the extent of perception of pupils who are using contextualized and localized modules was very high. There was no significant relationship between the pupils' perception on the utilization of contextualized and localized module and their posttest performances. However, there was a significant relationship on the perception of pupils exposed to contextualized module and their posttest performances. It concluded that the pupils learn effectively the science concepts using contextualized and localized modules.

**Keywords:** Localized, Contextualized, Effectiveness, Teaching Science

# **Metaphors and text coherence. A contrastive analysis between Albanian, German and English language**

Faik Idrizi/Arbër ÇELIKU

**Abstract** 'Coherence' as a linguistic notion is one of the seven basic criteria of textuality (Dressler 1981). There are many linguistic elements through them coherence can be achieved, but the focus of this article will be the metaphor in the Albanian, German and English language. The reason of conducting such a contrastive research consists of three guidelines: First, although Albanian, German and English belong to the same language family: Indo-European, also they are inflectional languages, but they have their own mechanism expressing linguistic phenomena. Secondly, the Albanian language, building an independent group within the Indo-European family group, provides some differences in the morpho-syntactic level compared to German and English as languages of the same group. Third, metaphors are not only a linguistic phenomenon, but, first of all, a cultural one. There is a big difference between Albanian, German and English. This article focuses not only to express the linguistic differences of the realization of text coherence through metaphors in Albanian, German and English, but also builds a methodological-didactic frame, especially for learners of German and English to avoid mistakes in the process of text constitution in these languages.

**Keywords:** Metaphors, text coherence, Albanian, German, English

# **Formative assessment and feedback in shaping the learning process – A review of the current literature**

Dr. Drita Saliu Abdulahi

**Abstract** Formative assessment (FA) and feedback are critical aspects of the recent formative pedagogy that have powerful impact in achievement in the modern era of education, especially after Covid-19 pandemic. The educational reforms of the recent decades have been in favor of the FA and its main principals that make this form of assessment successful and more acceptable. This paper presents a review of the current literature through the lens of the contemporary perspectives, empirical studies and recent successful practices across various subjects and disciplines. It aims to encourage teachers and teaching as well as students and learning in promoting achievement that is so crucial in the context of the complex and changing education environment of the modern era. My current experience as a high school teacher in North Macedonia after many years of work in university has raised questions about the proper implementation and the awareness of the role of FA and feedback in the school context. Although recent literature has shown the benefits of FA and feedback in moving learning forward, the teachers and practitioners struggle with the time and the knowledge of proper implementation of the formative pedagogy in the classroom. By critically looking at the latest existing literature on the uses and impact of FA and feedback in education, this paper aims to further contribute to the discussion on the topic by elucidating possible implications for teachers and researchers who are interested in the context of high school or similar educational settings.

**Keywords:** formative assessment, feedback, high school, achievement, learning.

# Challenges in Quality of Education in Higher Education Institutions (HEIs) of Pakistan

Zohaib Hassan Sain<sup>1</sup>

<sup>1</sup> Superior University, Raiwind Road Lahore, Pakistan

zohaib3746@gmail.com

**Abstract.** The purpose of this study is based on exploratory research to identify “Challenges in Quality of Education in HEIs of Pakistan”. Exploratory research approach is used to achieve the objectives of the study in less time and inexpensive means. From the last few years, Pakistan is facing a lot of challenges in education sector such as curriculum, less training institutions, corruption in education, teacher’s behavior, less research work. Emerging issues in education sector are less training institutions and trend towards research work which is essential to follow for the growth and strength of any economy. The purpose of our research is to identify the major challenges in educational sector in Pakistan which the educational sector is suffering from last few years. The researcher used triangulation in order to carry the reliability and validity of the data for results. So, to conduct this triangulation the researcher used poll survey for the students, questionnaire for the teachers and interviews of the management. . In this regard primary data was collected from the focused group of students using a sample of 100 questionnaires for each university were filled by the students of the selected five universities. This attempt of conducting the research will play an important role in the development of Pakistan. In this research Curriculum, Corruption in education, less training institutions, Teacher’s behavior and less research work are independent variables and Quality of Education is dependent variable. In future, we will research on the solution of these problems. To increase the literacy rate, the Govt. of Pakistan has announced that the education is compulsory for sixteen years old for every citizen.

**Keywords:** Curriculum, Corruption, Teacher’s Behavior, Research Work.

# **Implementation of Modular Distance Learning (MDL): Effects to Pupils' Academic Performance in Mathematics**

Arly T. Varona, MAEd-Admin

Erlinda N. Calumpang, EdD; Sheena Mae T. Comighud, EdD; Maria Chona Z. Futralan, PhD  
Antonia Gueyndoline Despojo, EdD; Sofia A. Tundag, EdD

**Abstract** This study aimed to determine the pupils' extent of perception on the factors necessary in the implementation of Modular Distance Learning (MDL) as an alternative delivery modality during the pandemic and their effect to their academic performance in Mathematics. The respondents of the study were the 176 randomly selected pupils. The researcher utilized the descriptive–correlational method and employed a validated questionnaire. Percent, mean, weighted mean, Chi-square and Spearman Rank-Order Correlation Coefficient were used as statistical tools. The study then revealed that the extent of pupils' perception on the following factors is high: (a) Instructional Design and Organization of Self-Learning Modules (SLMs), (b) Instructional Support Received from the More Knowledgeable Others (MKOs), (c) Home Learning Environment in the conduct of Modular Distance Learning (MDL), (d) Time Management Applied in Home- Based Learning, and (e) Learning Motivation Applied by MKOs and Oneself (extrinsic and intrinsic). It was also found out that the pupils' academic performance is generally in the satisfactory level. Furthermore, there is a significant relationship between the pupils' time management applied in home-based learning, and extrinsic motivation and their academic performance. A significant relationship also existed between the parents' educational attainment and the pupils' perceptions on the acquired extrinsic motivation.

**Keywords:** Modular Distance Learning (MDL) Implementation, Pupils' Academic Performance

# Level of Adherence of the Self-Learning Modules (SLMs) to Technical Requirements and Students' Academic Performance in Science 7

Marian Celeste S. Orbeta

Erlinda N. Calumpang, EdD; Sheena Mae T. Comighud, EdD; Maria Chona Z. Futralan, PhD  
Cristina P. Calisang, EdD; Sofia A. Tundag, EdD

**Abstract** This study aimed to determine the level of adherence of the Self-Learning Modules (SLMs) to technical requirements in relation to the academic performance in Science of the Grade 7 students of Bayawan National High School (BNHS), DepEd-Bayawan Division, Bayawan City, Negros Oriental, Philippines for the first and second quarters of SY 2021-2022. The respondents of the study were the 266 randomly selected Grade 7 students from the 19 different sections of BNHS. The researcher utilized the descriptive–correlational method and employed a validated questionnaire. Percent, mean, weighted mean, Chi-square, and Spearman Rank-Order Correlation Coefficient were used as statistical tools. The study then revealed that the level of adherence of SLMs to on the following technical requirements is high in terms of: (a) instructional design and organization, (b) format, (c) visuals, (d) assessments, and (e) readability. It was also found out that the students' academic performance is generally in the very satisfactory level. Furthermore, there is a significant and inverse relationship that exists between the age of the students and their academic performance. Also, the students' performance is significantly associated with their sex in favor of the female students.

**Keywords:** level of adherence, Self-Learning Modules (SLMs), technical requirements, students' academic performance, Science 7

## **Albanian literary modernism, first author of this poetic**

Prof. Ass. PhD. Manjola Brahaj  
UBT College - Higher Education Institution  
Address: Lagja KALABRIA nR. 56., Prishtinë, Kosovë  
Web: <http://www.ubt-uni.net>  
Email: [manjola.brahaj@ubt-uni.net](mailto:manjola.brahaj@ubt-uni.net)  
Phone: +38349330287

**Abstract** The object of this paper is the analysis and evidence through comparative methods, of the features of the first and most representative author of modernism in Albanian literature, Anton Pashku. We have chosen this object because throughout the development of the history of world literature if we look at the eras to see what they have brought to the world with their changes, we notice that there has always been a clash between currents and literary and philosophical directions, where they most the new ones have been and gone in contradiction with those of the predecessors. However, if we refer to the Albanian literature, we do not see such a thing, because the historical-political conditions through which Albania has passed, have been a crucial obstacle for its simultaneous development with European and world cultures and literatures. Under such conditions, a kind of literature has been born that we can call, the literature of individualities. A literature with the most representative features of modernism, but created only by a writer in Albanian literature. Therefore, we have decided to treat this original literary phenomenon, but which was born in Albanian literature for various extra-literary, social, historical and political reasons, through the author Anton Pashku.

**Keywords:** Albanian modernism, novel poetics, traditional novel, new novel, anti-novel, novel structure etc.



# Parental Roles in the Delivery of Modular Distance Learning (MDL) Modality: Effects to Pupils' Academic Performance

Juram E. Tablate, MAEd-Admin

Erlinda N. Calumpang, EdD; Sheena Mae T. Comighud, EdD; Maria Chona Z. Futralan, PhD  
Roulette P. Cordevilla, EdD; Cristina P. Calisang, EdD; Felipe B. Sullera, Jr., EdD

**Abstract** This study tackled the demonstration of parental roles during the delivery of Modular Distance Learning (MDL) modality. The respondents of the study were the 192 grade 6 parents and pupils of Bayawan City East Central School selected through systematic sampling technique. The researcher has then utilized the descriptive-correlational research design and employed weighted mean, mean, Spearman's Rank Correlation Coefficient, and Mann-Whitney U Test for statistical analyses. The results disclosed a high extent of demonstration on the roles of parents as facilitators at home, collaborators of teachers in school, monitors of learners' schedules, and motivators of children in answering the modules. The study also found out that the academic performance of the pupils is at very satisfactory level. Furthermore, it revealed that a significant and moderate relationship existed between the following roles of parents and the pupils' academic performance: facilitators at home, collaborators of teachers in school, monitors of learners' schedules, and motivators of children in answering the modules. A significant relationship was also indicated between the parents' educational attainment and the extent to which they demonstrate their roles. Lastly, respondents' perceptions differ significantly on the demonstration of parents' role as monitors of learners' schedules, indicating a higher perception from the pupils as compared to their parents.

**Keywords:** Academic Performance, Modular Distance Learning (MDL), home facilitators, collaborators, schedule monitors, motivators

# School-Based Management Practices of School Heads and Their Impact on Teachers' Work Engagement and Performance

Milagros G. Suyo, EdD

**Abstract** This study aimed to assess the level of school-based management (SBM) practices of the school heads in Tanjay City Division and their impact on teachers' work engagement and job performance during the school year 2020–2021. The study made use of descriptive– correlational research design. To measure the school heads' level of SBM practices, a standardized instrument developed by the Department of Education, which is evidence-based, was utilized. To gauge teachers' work engagement, a standardized tool developed by Schaufeli and Bakker entitled Utrecht Work Engagement Scale (UWES) was used. The study utilized percentage, Pearson Product Moment Correlation Coefficient, Kruskal–Wallis H-test, and t-test for its statistical treatment. The respondents of the study were the school heads and teachers who were subjected to sampling. The study revealed the following findings: The school heads' level of SBM practices is on the "Moving Toward" stage of Level I. Teachers' extent of work engagement in terms of vigor, commitment, and absorption is "Very High." Teachers' performance based on their IPCRF is "Very Satisfactory." There is a significant relationship between the school heads' level of SBM practices and the teachers' work engagement as well as their job performance. A significant relationship was also revealed between the teachers' work engagement and their job performance. There is a significant difference in the school heads' SBM practices when grouped according to their profile in terms of educational qualification, supervisory experience, and relevant training. Teachers' work engagement differs significantly when grouped according to age, and in terms of job performance, they differ significantly when grouped according to age, teaching experience, and relevant trainings. In general, it was concluded that the school heads' SBM practices have an impact on teachers' work engagement and performance.

**Keywords:** school-based management, work engagement, performance

# Schools' Level of Adherence towards Basic Health Protocols in the Management of Self-Learning Modules (SLMs)

Melvin Ray A. Yurong, MAEd-Admin

Erlinda N. Calumpang, EdD; Sheena Mae T. Comighud, EdD; Maria Chona Z. Futralan, PhD  
Jaymar T. Umbac, EdD; Antonia Gueyndoline Despojo, EdD; Sofia A. Tundag, EdD

**Abstract** This study aimed to determine the schools' level of adherence towards basic health protocols in the management of Self-Learning Modules (SLMs). The respondents of the study were the six public elementary school heads, 72 teachers, and 126 randomly selected parents of Kindergarten to Grade 6 learners. The researcher utilized the descriptive, comparative, and correlational research designs and employed a validated survey instrument. Mean, weighted mean, Spearman Rank-Order Correlation Coefficient, Kruskal Wallis Test, and Mann-Whitney U test were used as statistical tools. The study then revealed that the extent of management of SLMs in terms of pick-up and delivery is "high" as perceived by the school heads and parents while the teachers viewed it as "very high". In addition, the extent of management of SLMs in terms of storage and packing and distribution and retrieval is "very high" and "high" for learning materials and outputs as perceived by the three groups of respondents. It was also found out that the schools' level of adherence to basic health protocols in the management of SLMs is at "very high" level as perceived by the respondents. Furthermore, there is a significant difference between the perceptions of teachers and parents in their level of adherence to basic health protocols. Teachers perceived higher than the parents. Lastly, a significant relationship exists between the respondents' extent of management of SLMs and the schools' level of adherence to the basic health protocols.

**Keywords:** Level of Adherence of Schools, Basic Health Protocols, Management of Self-Learning Modules (SLMs)

# **Teachers' Practices on the 21st Century Skills and Senior High School Students' Academic Performance in the Core Subjects: Basis for Improving Instruction**

Antonia Gueyndoline Despojo, EdD

**Abstract** This study aimed to determine the extent of practice of the Senior High School teachers on the 21st century skills to develop their students' competence and become globally competitive. The respondents of the study were the 348 students representing the first three batches of Senior High School graduates of Foundation Preparatory Academy. The researcher utilized the descriptive–correlational method, used a validated questionnaire, and employed mean, weighted mean, Chi-square and Spearman rank-order correlation coefficient. The students' grades in the core subjects were also considered. The study revealed that the extent of teachers' practices on the following 21<sup>st</sup> century skills is high: (a) Learning and Innovation Skills; (b) Information, Media, and Digital Literacy Skills, and (c) Life and Career Skills. It was also found out that the students' academic performance in the core subjects is generally in the outstanding level. Furthermore, there is a significant relationship between sex and students' overall academic performance in the core subjects in favor of the female students. A significant relationship also existed between the type of Junior High School completed from and the students' overall academic performance in the core subjects in favor of those coming from public high schools. The study revealed that teachers' practices on the 21<sup>st</sup> century skills is high and the Senior High School students' academic performance is in the outstanding level.

**Keywords:** learning and innovation skills; media and digital literacy skills; life and career skills

# The Importance of Affective Variables in Private Academic Settings: A Review of High School Teachers and University Professors' Approach

Dr. Sc. Luiza Zeqiri

[www.ubt-uni.net](http://www.ubt-uni.net)

**Abstract** Understanding students' feelings in the classroom is a complex phenomenon. There are cases when students come to school or university: sick, feeling sad, afraid, ignored or neglected from their friends or their family members. All these are possible factors which can have an impact on the emotional states of the students in the classroom. As a result, their negative emotions can be a serious threat to their academic achievements. If teachers ignore the influence of affective variables on students' behaviour, the students are more likely to fail. Therefore, this study aims to investigate how high school teachers and university professors; teaching first year students, manage difficult circumstances which cause stress, fear or anxiety in a foreign language classroom. It particularly examines and compares how teachers deal with affective variables in private high school and university settings. The participants in this study were six university professors teaching English as a foreign language at South East European University and six high school English teachers at Maarif International School in Tetovo. It can be concluded that in private academic institutions teachers are concerned to some extent about students' emotional states and feelings. More specifically, high school teachers proved to have a more responsive attitude towards students' feelings and emotions. Based on the classroom observations, it remains questionable the degree to which university professors show empathy towards their students.

**Keywords:** emotions, symptoms, foreign language, speaking, writing

# **The various dialectal and media manifestations of albanian language and their negative effects in writing.**

Zejnije Bytyqi;

UBT-University for Business and Technology, Pristina, Kosovo

**Abstract** In this survey, we have focused on the influence of the media and the Internet, which are affecting the breakdown of the standard language. It is difficult to avoid many linguistic mistakes that we are encountering in academic writings. This negative phenomenon has been analyzed quite a lot and is written and it is being written every day by linguists. Bearing in mind the various manifestations of the dialect language in academic writings, in this survey we present the development of language culture in our Universities from the beginning of the standardization of language until today. Many linguists helped in the development of the Albanian language, but for this thesis we chose to focus on prof. Isa Bajçinca, who made an in-depth analysis in his many years of work on linguistic phenomena according to certain grammatical criteria. And this important phenomenon is taking a deserved place even nowadays in scientific research. The Internet today is at the service of humanity and contributes to communication, but like everything else, it has its good and bad sides. Therefore, we must work diligently to clean and enrich the Albanian literary language.

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# WRT in the treatment of spider phobia: Case study

Anita Sadikaj

Faculty of Psychology, University for Business and Technology - UBT, Pristina,  
Kosovo  
{ anita.sadikaj@ubt-uni.net }

**Abstract.** *Aim:* This case study demonstrates the experience of client change with BWRT therapy of a female 22-year-old, she reported she had always been afraid of spiders and could not recall ever being at ease with them and this fear has started to affect her quality of life.

*Method:* The data were taken from the detailed notes of 3 sessions of client therapy. Having gained the required information and having explained how BWRT works we set to work on the problem. During one stage of the BWRT treatment she recalled many memories of being in the presence of spiders, and with BWRT we chose the most uncomfortable memory to work with. Her feelings of discomfort were rated at 10/10 the highest score and after we completed the process, we discussed several other matters before returning to the phobia subject.

*Results:* After the sessions she felt relieved and energized. After ten days she came to the clinic saying that she can stay comfortably at home without any fear that might be spiders there.

*Conclusion:* Phobias can be resolved easily in a short period of time with brain working recursive therapy. BWRT is a new model of psychology and psychopathology that fits well with current thinking on neuroscience.

**Keywords:** Brain Working Recursive Therapy, spider, phobia, psychotherapy, neuroscience.



# The role of personality traits in people's attitudes toward EU membership in EU membership-aspiring countries: The case of Kosovo

Denis Çelcima<sup>1</sup>, Frederik Dara<sup>2</sup>, Eglantina Kalluçi<sup>3</sup>, Markela Muça<sup>4</sup>, Ridvan Peshkopia<sup>5</sup> & Vjollca Pllana Shahini<sup>6</sup>

<sup>1,6</sup> Department of Psychology, University for Business and Technology, Kosovo

<sup>2,3,4</sup> Department of Applied Mathematics, University of Tirana, Albania

<sup>5</sup> Department of Political Science, University for Business and Technology, Kosovo

**Abstract.** The consolidation of the Big Five personality model during the 1990s unleashed enormous multidisciplinary efforts to apply it as a set of explanatory variables to a wide range of human behavior, including consumer, health, religious, social and political behavior. However, with a single exception – a case study of the role of Big Five personality traits in Dutch people's attitudes toward their countries membership in the EU – the Big Five personality model has not been applied in explaining attitudes toward the EU, and explanatory models of people's support for the EU and EU-related issues and policies continue to rely on situational variables. We mount an effort to apply personality traits from the Big Five model to explain Kosovo citizens' support of Kosovo's membership in the EU and other EU related issues. We investigate the role of personality traits on people's attitudes toward three issues that the Western Balkans' publics meaningfully relate to the EU, namely support for EU membership, attitudes toward EU membership conditionality, and political trust in the EU politicians, institutions and the judiciary. We analyze two probabilistic samples of public opinion survey data that we collected in winter 2018-2019 in Albania and Kosovo through the cellphone random digit dialing (RDD) technique. Our efforts carry the double benefit of both testing the Big Five model in an underrepresented population, and opening an opportunity to observe any possible differences between the role of personality toward EU membership in countries that are already EU member (such as the Netherland) and Kosovo, a country that aspires to, but is still far from any tangible chances of joining the Union in the near future. Our findings would help to contribute both to the EU literature and the political behavior literature by reverberating the need to include personality trait variables in explanatory models of attitudes toward the EU and EU related issues and policies.

**Keywords:** personality traits, attitudes toward EU, Big Five personality model

# Deviant Behavior and Social Control

Eglantina Kraja Bardhi<sup>1</sup> & Niman Bardhi<sup>2</sup>

<sup>1</sup>UBT - Higher Education Institution, Lagjja Kalabria, 10000, Prishtina, Republic of Kosovo

<sup>2</sup>Ministry of Health, St. Zagreb, no. 60, 10000, Prishtina, Republic of Kosovo

**Abstract.** *Introduction:* deviance is an unavoidable and normal aspect of social life. The phenomenon of deviance has been explained historically from different perspectives, starting from the theological school of demonology in the Middle Ages and continuing today.

*The purpose:* assessment of students' opinions regarding their knowledge of deviant behavior in society, especially among youth, and the level of reporting to the surveillance system.

*Methodology:* survey and selection of students was randomized. The population was 140 students (55% female and 455 male) of grades 10, 11 and 12 in the high school of medicine and economics in Peja.

*Results:* 59.3% of students are close to their parents and express their opinions. 42.9% of young people conflict among themselves and cannot express their opinions. 29.3% smoke tobacco, 5.7% regularly consume alcohol and 18.6% occasionally, while 5.7% are regular users of narcotic substances, while 26.4% declare that it is quite easy to obtain narcotic substances in the environment where they live/learn.

*Conclusions:* the findings show that the social circle, in relation to that of the school and the family, dominates in creating the circumstances of deviant behavior. Planning and systematic development of activities organized by schools in cooperation with teachers, students and family members, with the aim of informing and educating in the prevention of deviant behavior. Educators support students to manage situations and remove conflictual style.

**Key words:** students, deviant behaviour, smoking, alcohol, drugs.

# The level of anxiety among teenagers aged 13-18 at the beginning of the 2022/2023 school year in the municipality of Prishtina and Prizren

Emrush Thaci<sup>1</sup> & Besarta Sadriu<sup>2</sup> University for Business and Technology – UBT, Kalabria - 10000 Pristina

<sup>2</sup>University “Ukshin Hoti”, Faculty of Education, Prizren

<sup>1</sup>{emrush.thaqi@ubt-uni.net}, <sup>2</sup>{besarta8@outlook.com}

**Abstract.** As adolescence is one of the periods that is associated with major changes in physical, cognitive, psychological and emotional development, a period of turbulence in the understanding of personal and social identity, relationships with parents and others also not forgetting that in recent years we are constantly faced with the situation caused by Covid-19, challenges in various areas of health, social, economic and undoubtedly it has been for both adults and adolescents a difficult period of coping with a new daily life. For this reason, our study focused on the period of adolescence specifically on anxiety in adolescents aged 13-18 years to better understand the anxiety among adolescents in the city of Prishtina and Prizren. Specifically, the study compared anxiety by gender, socioeconomic status. The study also examined adolescents' perceptions of quality time with their parents. The study includes a group of 460 adolescents (220 girls and 240 boys), aged 13-18 years selected for the quantitative study, through the technique of stratified random sampling for a more proportional representation of the target population being that adolescents from primary and secondary schools from these two municipalities were included. Data were collected using a semi-structured self-report questionnaire and a standardized psychological test, the Beck Anxiety Inventory (BAI). The results show that anxiety was prevalent in the sample with 20.1% of girls and 17.9% of boys suffering from high anxiety. Girls were more anxious than boys ( $p < 0.01$ ). Adolescents from high schools in Prishtina were more anxious than adolescents from high schools in Prizren ( $p < 0.01$ ). Adolescents with average socioeconomic status (middle socioeconomic group) suffered more anxiety than those from high and low socioeconomic groups ( $p < 0.01$ ). Adolescents with working mothers were found to be more anxious ( $p < 0.01$ ). The results also show that a significant proportion of adolescents feel that they have not received quality time from fathers (32.1%) and mothers (21.3%). A large number of them also did not feel comfortable sharing their personal affairs with their parents (60.0% for fathers and 40.0% for mothers).

**Keywords:** adolescence, anxiety, gender differences, parental relationships, socio-economic status.

# The impact of Erasmus exchange program on student's personal and professional development

Njomza Llullaku<sup>1</sup> & Rita Selimi<sup>2</sup>

<sup>1,2</sup> Department of Social Work, University of Prishtina 'Hasan Prishtina', Rd. George Bush, Nr.31, Prishtina, 10000, Kosovo. <sup>1</sup>{njomza.llullaku@uni-pr.edu}, <sup>2</sup>{rita.selimi@uni-pr.edu}

**Abstract.** *Background:* Studying abroad comes with many possibilities for students among them being enhancing their professional skills as well as personal growth. On the other hand, this experience can come with challenges especially in cultural aspect.

*Goal:* This study aimed to understand the experience, challenges, opportunities students from Social Work Department, University of Prishtina "Hasan Prishtina" had during the Erasmus exchange program and after their return in Kosovo.

*Methods:* A targeted sample of 27 participants (n=27), among them 89% females and 11% male withing age range of 18-26 years old were selected. Semi-structured interviews were conducted, and the data was analyzed using thematic analysis, and through the coding process various categories were identified.

*Results:* Students reported that Erasmus exchange program shaped them in the personal aspect by giving more independence and competences on personal and professional life, as well as on changing their perceptions regarding career plans. Among challenges, the different culture, different social and educational system, and family longing were emphasized.

*Conclusion:* Students who followed Erasmus exchange program reported it as a positive experience which helped them have a stronger formation of their personal and professional identity. However, based on recognized challenges it is crucial to offer student support programs during their semester abroad and especially after their return (readaptation) in their home country.

**Keywords:** exchange students, studying abroad, students' development, Erasmus+, Social Work.

# The acceptance of digitalization process in Albanian high education system

Maria Dojçe<sup>1</sup>, Rudina Collaku<sup>2</sup> & Denisa Titili<sup>3</sup>

<sup>1,3</sup>Department of Social Science, University of “Fan S. Noli” Korçë, Albania

<sup>2</sup>Department of Education, University of “Aleksander Xhuvani” Elbasan, Albania

<sup>1</sup>{mdojce@unkorce.edu.al}, <sup>2</sup>{rudinacollaku@hotmail.com}, <sup>3</sup>{dtitili@unkorce.edu.al}

**Abstract.** Based on the development process of technology, expertly in contemporary societies, it is noted that education system in most of the countries need to develop digitalization process. The increased involvement of technology in all aspects of our lives places educational institutions under pressure to include these aspects at the heart of their learning. This ensures that they continue to be competitive in a constantly changing market with international and cultural links. This study explores the factors that influenced the development of learning through technology at two Albanian universities, focusing on full-time staff and students. It considers the general attitude towards engaging in learning through technology with outcomes demonstrating that training and development is required prior to implementation to adequately support the learning transition. The organizational infrastructure often presents the greatest barrier to such developments. Informed by the outcomes of the study, a training and development programmers has been designed, developed and implemented to support the cultural change and increase its impact.

**Keywords:** digitalization, technology, culture, learning, higher education, Albania.

# The impact of information technology on the socialization of children

Nerxhivane Krasniqi

Universiteti i Gjilanit "Kadri Zeka", rr."Zija Shemsiu" pn. 60000 Gjilan

nerxhivane.krasniqi@uni-gjilan.net

**Abstract.** Information technology is now an inseparable part of our lives that is used a lot, especially by young people. In today's materialistic world, we are gradually moving towards a culture in which parents fulfill their duties by giving children Ipads, Play Stations and computers instead of spending time with them. These children remain deprived of love and care of their parents and this emptiness, they fulfill with technology. The purpose of this research is the impact of information technology on children related to socialization. The research is a quantitative approach completed by the parents of third and fifth grade students at the "Musa Zajmi" elementary school in Gjilan. The research question was whether children are socializing more with the Internet or their society. From the obtained results of this research, we have come to the conclusion by proving the given hypotheses that information technology is influencing children to spend more time on the Internet than with their society, and children feel anger/boredom if they do not have access to the Internet. **Keywords:** Information technology, children, socialization.

# Predictive value of personal and social concerns over pandemic-related stress

Qufli Osmani<sup>1</sup>, Delvina Beka<sup>2</sup> & Fariz Farizi<sup>1</sup>

<sup>1</sup> UBT-Higher Education Institution, Faculty of Psychology

{ Qufli osmani, [qufli.osmani@ubt-uni.net](mailto:qufli.osmani@ubt-uni.net) Fariz Farizi, [fariz.farizi@ubt-uni.net](mailto:fariz.farizi@ubt-uni.net)  
Delvina Beka, [delvinabekaa@gmail.com](mailto:delvinabekaa@gmail.com) }

**Abstract.** The paper analyzes socio-demographic and psychological predictors of pandemic stress in Kosovo. The research conducted in 2020 has collected data on the sample of 366 respondents from Kosovo. The respondent of both sexes were included in the sample, aged 18 to 47 with different levels of education. The following variables were taken as psychological predictors: personal and social concern. The effects of other socio-demographic characteristics (age and education) were also tested. Applied multiple regression (stepwise forward) proved that: The coefficient of determination, which means that the group of predictors together explains 16% of the variance of the criterion variable. The results from the regression analysis shows that in the group of predictor variables, in the context of the examined variables, above is considered the type of information on Covid-19. Predictors also provide a high degree of explanation of the variance of the criterion variable: concern for the health of relatives and the amount of personal information on Covid-19. The calendar age of the subjects stands out as important factors in predicting pandemic-related stress in the vulnerable-resistant dimension to pandemic-related stress.

**Keywords:** pandemic-related stress, concern, predictors, Covid-19.

# Children's involvement in policy making after the approval of Children's Law in Kosovo

Rina Kadiri

[rinakadiri@gmail.com](mailto:rinakadiri@gmail.com)

**Abstract.** The right on participation of children is one of the four main principles of the Convention on the Rights of the Child. This paper first discovers how children's participation is assessed by the main Kosovo state institutions, as well as NGOs, and identifies ways of the involvement of children in policymaking, as well as the factors that indicate the participation of children in Kosovo. For this purpose, qualitative research methods were used and questions were asked on how the participation of children in Kosovo is assessed, how children are actually involved, and which are the influencing factors in the implementation of this process. Primary data were collected through semi-structured interviews. The population of the study were state institutions and NGOs working in the field of children's rights. While, sampling is selected through literature review, and have been the competent actors to implement the right to participate, with twelve participants as key persons for this topic. Some of the findings of this study are that child participation in policymaking is a new concept in Kosovo, which has become more recognized as a right over the last four years. The biggest driving factor is NGOs, while the main hindering factor is the mentality of policymakers and the whole society. Since Kosovo is in the beginnings of child participation, there are few positive examples of child involvement. However, there are many good practices of cooperative participation and a high level of participation, precisely because to the work of non-governmental organizations.

**Keywords:** Child participation, NGOs, public institutions, law, Kosovo.



# An analysis of interpretations and discussions regarding the importance of developing intercultural competence through education

Denisa Titili<sup>1</sup> & Maria Dojçe<sup>2</sup>

<sup>1,2</sup> Department of Social Sciences, “Fan S. Noli” University, Korçë, Albania

<sup>1</sup>{dtitili@unkorce.edu.al}, <sup>2</sup>{mdojce@unkorce.edu.al}

**Abstract.** The globalized society and ‘the living together’ project bring together individuals of different cultures who need to interact in a way that avoids misunderstandings and allow the existing diversity. The interest for intercultural research is getting increased due to large scale migration, multicultural social environments, workforces that operate internationally, student exchange or international programs, etc in order to promote and facilitate a new system of orientation among people of different cultures. The paper aims to shed light on academic debate concerning the concept ‘intercultural competence’ as an important need to completely treat intercultural situations as well as building relationships through intercultural competence. The aim is to highlight the importance of educating and developing intercultural competence. A number of studies regarding the purpose of intercultural competence range from economically oriented applications that emphasize efficiency to more academic or education-based perspectives that emphasize human development. These range from a narrow understanding of a competence which is applicable only to a specific culture, while other approaches extend the term to include a full range of social and practical competences. An ‘inter-national’ interpretation of intercultural competence generally defines the context for intercultural interaction as one involving individuals from different national cultures. While in a broader understanding an inter-collective model emphasis the existence of subcultures and various cultural strata within a uniform national culture. The inter-collective model describes the interaction between individual members of specific collective with their own distinctive culture. For intercultural competence to be developed it is important to understand the principles of intercultural education as well as the definition of intercultural competence. This paper will provide an overview and analysis of all interpretations and discussions about the need and importance of educating intercultural competence. The aim is to highlight the goal, efficiency, applicability and utility of intercultural competence in a globalized society.

**Keywords:** intercultural competence, culture, social interaction, cultural cohesion, diversity.

# The impact of supervisor support and quantitative demand on employee burnout

Valdrin Krasniqi<sup>1</sup>, Vjollca Pllana Shahini<sup>2</sup> & Denis Çelcima<sup>3</sup>

<sup>1,2,3</sup> Faculty of Psychology, University for Business and Technology - UBT, Pristina,  
Kosovo

<sup>1</sup>{valdrin.krasniqi@ubt-uni.net}, <sup>2</sup>{vjollca.shahini@ubt-uni.net}, <sup>3</sup>{deniz.celcima@ubt-uni.net}

**Abstract.** The research aims to explain the relationship between supervisor support, quantitative demands, burnout, and job performance. The main research question of the current research was: What is the impact of supervisor support and quantitative demands on burnout and job performance? Referring to the Job Demands-Resources (JD-R) model, the research assessed to what extent job characteristics influence employee burnout and job performance in an organization. This study predicted that quantitative demand is positively associated with employee burnout, and supervisor support is negatively associated with employee burnout, which in turn impact job performance. This study used a cross-sectional approach among 404 employees in an energy organization involving technical and non-technical staff. To test the hypotheses, we analyzed the data using SPSS. The research found that supervisor support decreased burnout, and quantitative demand increased burnout. In addition, this research revealed that burnout decreases job performance. This research brings new evidence and fosters a deeper understanding on the relationship between supervisor support, quantitative demands, burnout, and job performance. These results may be used by top management of the organizations or human resource departments to promote the adequate job characteristics in order to reduce burnout among their staff and increase job performance.

**Keywords:** Supervisor support, quantitative demand, burnout, job performance.

# Psychological people's experiences after the death of a family member: a qualitative study

Violeta Zefi<sup>1</sup> & Bekrije Maxhuni<sup>2</sup>

<sup>1</sup>University for Business and Technology, Faculty of Psychology, Lagjja Kalabria  
10000 Prishtinë, Kosovo  
violeta.zefi@ubt-uni.net

<sup>2</sup>Sofia University of St. Kliment Ohridski, 15, Tzar Osvooboditel Blvd, 1504 Sofia,  
Bulgaria  
bekrie8@gmail.com

**Abstract.** Experiencing the death of a family member or a close person can profoundly affect the individual's life. This research explored the psychological people's experiences after the loss/death of a family member. From January 5 to September 1, 2022, we interviewed 20 (n=20) people who experienced the death of a family member or a close person in Kosovo. Semi-structured interviews were conducted face-to-face and thematic analysis was used as a method to analyze interview transcripts. The study identified four themes: (1) reaction to the death (expected/unexpected death); (2) emotional expressions (shock, anger, sadness, grief); (3) support and understanding and (4) re-grief. According to the research results, losing a family member has profoundly changed the personal and social individual's life. In addition, people who have lost a loved one have experienced shock, sadness, anger, grief, loneliness, etc. In this regard, providing socio-emotional support to a person or whole family during the mourning period would help them better adjust to such changes caused by the death of a close family member.

**Keywords:** people's experiences; death; family members; emotional expressions; support.

# 11th International Conference

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# **Singer Voice problems**

**Adelina Thaqi**

**Abstract:** Some of the more common vocal cord disorders include laryngitis, vocal nodules, vocal polyps, and vocal cord paralysis. Vocal cord disorders are often caused by abuse or misuse of the voice. Symptoms may include a hoarse, low-pitched voice, trouble swallowing, or a cough. Other problems are also the loss of voice due to abuse and incorrect technique in singers, as well as vocal overload in professional singers.

# Music practices in Kosovo (before 1950s): On the background of amateurism and cultural-artistic societies activity's

PhD. Cand. Kristina Perkola  
kristina.palokaj@ubt-uni.net

**Abstract** The attempt to explore musical activity and the development of art during the first part of the 20th century, as an essential need of the time, represents one of the most important tasks of Kosovar historical musicology today. In partial/initial form, this paper represents the product of a research based on narratives, archival documents, books, writings, and especially descriptive information (newspaper articles) published in various newspapers and/or magazines between 1945-90 (e.g., Literary Journal 'Jeta e Re [New Life], 'Përparimi' [Progress], Newspaper: Rilindja etc.) and brings in appealing forms, narrative information about music practices related to a cultural terrain where conditions, possibilities and perspectives were almost only two-dimensional - amateurism and folklore. While studies in the field of Ethnomusicology, have reached a certain level (realized since 1950s), historical musicology has never managed to be as 'productive' as ethnomusicology, musical creativity and artistic activities. With cultural developments in the years before WWII, (including musical formations and practices) we are not separated by multi century distance, so this makes us gravitationally attracted with that period, where musical developments were not multi-dimensional, but they are multi-dimensionally important, both in historical and ethnomusicological terms.

**Keywords:** Kosovo, music, amateurism, folklore, cultural-artistic societies.

# The contribution of the Cultural Educational Organisation “Shkelzeni” to the musical life in Kosovo

Dr. Nexhat Çoçaj

UBT – Institucion i Arsimit të lartë, Lagjja Kalabria, 10000 p.n., Prishtinë, Kosovë  
[nexhat.cocaj@ubt-uni.net](mailto:nexhat.cocaj@ubt-uni.net)

**Abstract** The establishment of the “Shkelzeni” Cultural Educational Organization, in Krumë i Hasit, respectively in the “Kosova” Prefecture, marks the first serious step in the presentation of Kosovo music throughout the Albanian space. Through this paper, I will try to present the contribution of the students of the Kruma school to the spread of music in Albania, which spread was mainly made by the students of Kosovar families, whether those who moved from Kosovo or those who settled for economic reasons. The activity of this association was initially supported by Bajram Curri, Niman Ferizi, Ibrahim Fehmiu, Bajram Daklani, Azem e Shotë Galica and many other patriots. The the “Shkelzeni” society had the same musical formation as the societies of the time in Shkodër and Korça, but the instrumentalists of this society were mainly students from Kosovo, who, upon returning to Kosovo, influenced the opening of musical societies in Kosovo and spread the musical culture and in particular spread the patriotic music with special emphasis on the national anthem. The orchestra of this society trained many instrumentalists of wind, string and other instruments. This society in the years 1923-1939 had shown over 100 musical programs throughout Albania and 90% of its members were students from Kosovo. The equipment of the orchestra of this society was made by Albanian patriots.

**Key words:** wind orchestra, musical instruments, concerts, national music, etc.

**Mihal Ciko-The first Albanian lyrical singer**  
**(1902, August 29, 2022-On the 120th anniversary of the birth of Mihal Ciko**  
**1902-1986)**

Dr. Behar Arllati, MSc. Aida Gjiko

**Abstract** In this scientific study, it will be about Mihal Cikon-Barito who studied at the "Giuseppe Verdi" Conservatory in Milan in the years 1921-1926, becoming the first educated Albanian Lyric singer; for the years 1926-1928, from which he obtained a Master of Singing Pedagogy; then for teaching at the "Claudio Monteverdi" Conservatory of Bolzano-Italy; for his activity on the stages of Italy and Romania; for his patriotic activity as a participant in the Vlora War-1920 with the members of the "Vatra" Band of Boston-Massachusetts; for creating patriotic songs; for the establishment of the largest musical institutions and performances in Albania; for his contribution as a Singing Teacher (Cantos) at ILA; of his age and creative Invention of patriotic songs; for his contribution to the newly established Radio Tirana; for the contribution to the creation of choirs in different cities of Albania until he died in 1986; for the suffering of his son-prof. Zhani Ciko, namely his contribution and responsibility as the son of the first Albanian Liric singer, as well as for other interesting and little-known details for the vast majority of Albanians. The selection of this topic as a scientific study was made for the following reasons:

1. The recognition of Mihal Cikos by music researchers in Kosovo and North Macedonia is very little and this constitutes a (re)recognition for the musical circles of these regions.
2. For enhancing the merits that Mihal Ciko has in contributing to the field of cultivated Music and not only.
3. For the patriotic attitude together with the Albanian Revivalists, such as: Mihal Grameno, Hil Mosi, Kol Tromara, Asdreni, Murad Toptani, Viktor Eftimiu, Thoma Nassi, Kristo e Thanas Floqi and many others up to the world famous actor, Aleksandër Moisiu.

**Keywords:** Mihal Ciko, Korça, Bucharest, Giuseppe Verdi Conservatory, Patriotic songs, Bel Canto in Albania, Radio Tirana, TOB, Choir "Lira".



# **The sound of stillness - pairing silence with still images in movies of Samir Karahoda**

Dr.Liburn Jupolli[1]

UBT-University of Bussines and Technology

**Abstract** In this article I will analyze various aspects of sound and image treatment in the movie “In Between”. Given the type of sound treatment that has been produced i will highlight from this analysis how the sound is used in the context of sound composition and sound design by itself, the relationship between the image and the special perceptual effect of the pairing choices of sound and image.I will discuss the absence of music in parallel with the lack of camera movement and the lack of visual pairing with the sound when characters speak and what perceptual effect this produces

**Keywords:** musicology, cinematographic music analysis, soundtrack analysis

# **Crisis as a main change instigator: A practice based approach of a multi-case study in Kosovo firms**

Mrs. Diana Lekaj

University of Warsaw, Faculty of Management, Poland

University of Maryland, USA

UBT College - Modern Music, Digital Production & Management;

Programme Music Management

**Abstract:** This paper aims to explore organizational state of crisis as the main instigator for initiating strategic change in eight private companies in Kosovo. While change and crisis at a firm level have been explored substantially, the practice based approach of strategic change during such situations received undesired research attention. A practice based perspective 'strategy as practice' approach until recently has concentrated mainly around strategy creation and strategizing rather than strategic change implementation and practices. This study uses grounded theory approach (Charmaz, 2006) to examine organizational practices that lead to crisis disrupting organizational functioning while providing insights of change management from practice perspective in Kosovo context based on management perspective. The study identifies 4 types of crisis that threatened the competitiveness and future viability of these companies: organizational culture crisis, management malpractices, regulatory intervention and emerging trends. These practices are grounded in data and offer discussion on strategic change initiatives undertaken for a successful organization transformation in Kosovo context.

**Keywords:** strategy as practice, Experiencing crisis, strategic change, processes and practices, organizational context, culture

# **Interpretation on the clarinet in the relationship between classical and folk- Traditional music**

Msc. Blerim Emërllahu

**Abstract** In my experience as a teacher and as a performer/soloist or even in ensembles - chamber music, we have encountered various interpretive problems, and so we have always looked for a reason, why are we stuck working on instruments? This topic will be elaborated in the paper as very necessary and an important topic for instrumentalists. The purpose of this paper is to better understand the problems and differences in the techniques and interpretation possibilities of the clarinet instrument in classical music by comparing it with the interpretation possibilities in popular music.

**Key words:** Clarinet interpretation, classical music, popular music, traditional.

# **Analysis and discussion on my musical creativity during 2016-2021**

Artan Hasani

**Abstract** In this article I present my artistic compositional work for Volume 1 (with chamber works of various formations) specially composed from 2016-2021 (the volume published in 2021) is revealed. Briefly (for each work), details are revealed about the composition process, the idea and additional details, where clarifications are given for works dedicated to instrumentalists or works commissioned for certain events. In the article I present the incorporation of Albanian elements in my works, the stage placement of the instrumentalists - which I, as a composer, have sometimes modified. In one of the works "The Moon" elaborates on astrological elements incorporated in this work. Composition details are elaborated for chamber formations that I composed for and that we lack.

# Digitalisation in Music

Leutrina Pireva

**Abstract** The music industry, along with other industries, has been and continues to develop further in recent years. The development of technology and digitalisation is the biggest resource in this area. The beginning of the music industry in the 1900s is much different compared to the recent years 2000-2022. Through the examples in this paper, the process of working in music during these years is presented. Starting with the first inventions that were made in achieving the recording and reproduction of music and the achievements of this process in the present time.

# Development of the culture of choral ensembles in Kosovo

MSc. Lindita Isufi

Institution: College UBT - Higher Education Institution, Pristina Kosovo

[lindita.isufi@ubt-uni.net](mailto:lindita.isufi@ubt-uni.net)

**Abstract** Albanian choral music in Kosovo has had a great leap of development over the years since its foundation. The existence of these choirs in some of the most developed cities of Kosovo had great effects because for years it exercises and develops the Albanian society with a harmonious feeling and taste. Choirs formed and led very successfully by their conductors deserve praise because from amateurism they continue to become professionals and from this work they raised the artistic values of choral singing in Kosovo. I want to emphasize the role played by the many choirs, even though they were formed late compared to neighboring countries, they still played an important role in the spread and development of choral music. So these were great artistic achievements where some of the choirs still continue their high contribution. Undoubtedly, special credit goes to the creators and conductors of choral music.

# **Works created by Artificial Intelligence (AI) in relation to the Law on copyright and related rights in Kosovo**

Mrs. Sadije Topojani

**Abstract** We are in the age of digitization, where the development of computer systems is defining the next decades. Nowadays we are seeing works of art, literature and science being created by artificial intelligence and every day without noticing it is present on digital platforms artificial intelligence, which has knowledge about our preferences that we use a certain digital platform, for example, referring to our prior requests, the Netflix platform suggests programs and movies according to our preferences, about which it now has knowledge. Works created by artificial intelligence do not have human creation, but are created by computers, robots, etc. The legislation of Kosovo that protects copyright and related rights recognizes the natural person who created the original work as the author of the work. Therefore, this is the reason that this paper aims to provide a general analysis of copyright and related rights in Kosovo in relation to works created by artificial intelligence.

# The figure of Gjergj Kastriot - Skenderbeu in Albanian music

Yllnor Kurti

[Yllnor.kurti@ubt-uni.net](mailto:Yllnor.kurti@ubt-uni.net)

**Abstract:** Known mostly as "Skënderbe", Gjergj Kastrioti has already engrained himself in the history of Albania as a "national hero" figure, even as a symbol of the identity of the Albanian and of their resistance and/or their wars, at the level of world encyclopedic information. The figure of Skenderbeu inspired popular creators in Albania and the diaspora, but not only, as foreign artists have also created for this monumental figure in every field of art (18th century composer Antonio Vivaldi composed an opera for Skenderbeu). In this paper it will be possible to follow: Figure of Skanderbeg, the first work dedicated to the figure of Skanderbeg, paintings and sculptures, composers who created on the figure of Skanderbeg, Genre of Opera.



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# The Battle of Images

Alban Muja

**Abstract** My research will focus on journalistic images from times of war and conflict and their impact in the way we view, understand or even remember the past. Particularly since such images might capture, depict and document real events, but they might also produce various, conflicting interpretations. The wars of Yugoslavia during the 1990s provide one such place for examination. On one hand, the media images coming out of various war-related localities offered insight into what was happening in the ground and how people were being affected. On the other hand, media images would often become subject to conflicting interpretations led by propaganda. It is said that the war of images is as strategic as the real war, especially today when we live in a digital world where information spreads quickly, regardless whether it is verified or not. To triumph one must “win” both wars. So, how can we handle such images in research? In what ways can propaganda be rediscussed and re-evaluated, and become part of a larger discussion? Moreover, can images from more than 20 years ago also serve as a guide to unraveling and understanding perspectives unknown by engaging in discussion with the authors or the protagonists of the images? I believe so. With the “Battle of Images” — as reality or as a distortion of reality; as individualization of emotions or now — I will try to explore how images can serve as places to discuss and further understand the conflicting interpretations behind them.

## Ex Post Facto 2

Gazmend Ejupi

**Abstract** The ongoing series of cinematic paintings questions historical reference of major events around the world that made a difference in our lives today. Finding a story for new series was very difficult. Starting from tragic stories and added fictional titles, there is irony that gets the viewers to question the concept behind these series. I guess it works, confusing the viewers. Social economical and political references since 1940 are present, starting from Winston Churchill portraying the young leader and titled one of his famous quotes. In other painting is Richard Nixon, one of the famous images where he pointing finger to the media at his time, but I need to add my own sentence as a title, I am Not a. Ex Post Facto 2 is an example of our daily life that we connect in today's social media and film. These series of painting will serve Images that we could be easy forgotten.

**Keyword:** Film, social and economic, archive, crime

# Site Specific Sculpture: application in the work "Drawings in the Air"

Burim Berisha  
UBT College  
10000 Pristina, Kosovo

**Abstract** Sculpture, being known since prehistory, has a long time of development and use from the artisanal and monumental side. As such, sculpture has gone through different periods of artistic expression and different styles and different societies. In the context of contemporary society and the transformations of the last century, sculpture, like many other activities, is naturally tested with the difficulty of being present in the cultural market and keeping up with artistic trends. Consequently, sculpture, in its development to be present in contemporary trends, has expanded the language of communication through the use of different techniques, experimentation with different materials and different two- and three-dimensional forms, concept, naming, use of digital media, color, etc. In this case, the use of the specific place is one of the forms that help the development of sculpture in contemporary times. In this context, this work presents a "mirror" of the harm we do to nature and consequently to ourselves through pollution, and through the application of the specific place as a starting point for the conception of a sculptural form we achieve better communication, including in this case also the history of the location. Reference the two 2022 biennales - the Venice Biennale and the RKS nomadic Manifesta. The paper focuses on the use of the term site specific sculpture, air drawing and the concept, named "Air Drawings" (*public art work*) that was realized in 2021-22 (*supported by MKRS*) and will be installed during 2022 in Prishtina. The paper elaborates the characteristics of the sculpture, the analysis of environmental pollution, and the artistic intervention, based on the history of the specific place, through lines and geometric and organic forms that shape and complete the sculptural work "Site Specific Air Drawing Sculpture".

**Keywords:** Sculpture, site specific Sculpture, "Drawings in the Air", public art.

# StoryLab: A Case Study of Nonformal Learning Models for Interdisciplinarity and Multidisciplinarity with Focus on Arts, Design, Technology, and Creative Writing

Artrit Bytyçi

MFA, University for Business and Technology, Prishtina, Kosovo,

[artrit.bytyci@ubt-uni.net](mailto:artrit.bytyci@ubt-uni.net)

**Abstract** This paper investigates the advantages of using nonformal education. Countries in transition are often faced with gaps in the formal education system, either be them public or private. For public educational institutions, these come from a variety of reasons, ranging from lack of funds, lag in the adoption of the latest teaching methods, poor management, overworked academic staff, adoption of wrong educational policies on the State level, etc. Private educational institutions, while being able to better solve some of the problems of the public institutions, they face their own challenges. Even though they are often better suited to change and modify their educational programs based on the needs of the students, they are often slowed down and hindered by bureaucracy, over-regulation, and inflexibility as a result of having to comply with various education regulatory and accreditation bodies, etc. In our paper, we propose an alternative in the form of nonformal learning models, which are applicable not only in countries in transition but also in those with long traditions of quality and innovation in education. We will focus namely on the case of StoryLab from Kosovo. Specific educational methods used by StoryLab will be discussed, and an overview of past, current, and upcoming projects and programs will be presented. Furthermore, some of the challenges this model faces will be explored. The role of independent arts and cultural institutions will be discussed, followed by the importance of integrating the offerings from the independent arts and culture scene into the existing traditional and formal educational institutions.

**Keywords:** art, design, education, technology, creative writing, students, education methods, nonformal

# Archiving transition and self – historicization

Fitore Isufi Shukriu1

**Abstract.** Cultural developments in Kosovo mainly refer to the fragile state of art in the country, which continues to be such today as well. A system of art lacking many elements and not fully functional. The geographical, historical and political context has determined it, since for more than 3 decades, Kosovo has passed through many complex political and economic processes that have been highly influential on social and cultural developments. Sensing this, we must reflect on our role as artists, activists and civil society in this whole. To question whether we have identified the elements that are lacking in this system of art? Whether we consider our specific needs as a country and as cultural workers? All of this in order to reflect on the type of art system we are producing and whether we are determining its future. A documentary exhibition called PÉRTEJ - archiving transition, brought by Galeria 17, in Prishtina, confirms once again that the cultural institutions of the country have held a negligent stance towards important events of our cultural history. The exhibition containing archival material, interviews and artefacts from 25 years ago, today serves missing narratives, those that we are living and those that will come. While public archives are scarce, cultural policies still developing, the independent scene inevitably turns towards self-initiative and self-organisation, in order to contribute to documentation and archiving through a self-historicizing and educative process at once.

**Keywords:** Archiving, transition, art system, self-initiative, self-organization, self-historicization.

# AI and Art

Ma. Dardan Luta

**Abstract:** The last few years AI led to major changes in the cultural field, especially in the field of art and film. In this study, the effects of AI on art are handled by examining the first intelligent man made system and also the impact of it is examined by focusing on the AI art generators. The first chapter gives visual information and examples of Ai image generators from textual ones to feeding with actual images who were produced by artists, and clarifies the aim and methodology of the study. Other part of the presentation is analyzes the interview of LaMDA\* on the questions of sentient. The conclusion presents the aim of the article and depicts the impact of AI and its continues growth over the works of art.

**Keywords:** Art, Ai, Art Generator, Artist, Theme

# The application of AR/VR technology in e-commerce

Zymer Veliu

UBT University, Prishtina, Republic of Kosovo

**Abstract** Nowadays shopping through E-commerce (electronic commerce) using AR/VR technology is growing rapidly in the global market. If I take the statistics as a basis, according to Statista, the global augmented reality (AR), virtual reality (VR), and mixed reality (MR) market reached 28 billion U.S. dollars in 2021, rising to over 250 billion U.S. dollars by 2028. As part of the wider extended reality (XR) industry, the global AR market size is expected to grow considerably in the coming years. Well, even though these statistics are increasing day by day at the global level, we see that in the territory of the Republic of Kosovo, the companies that use E-commerce (electronic commerce) using AR/VR are still a small number of companies that have started to use to sell their own products through e-commerce using AR/VR. In this study we will present the main advantages that e-Commerce merchants can benefit from by adopting augmented reality (AR) and virtual reality (VR). However, there are various obstacles to overcome this goal, especially technical ones for expanding their use. This study investigates how AR/VR technology works and its possible impacts on online e-Commerce purchases, in relation to the commercial potential of AR/VR in e-Commerce in the territory of the Republic of Kosovo. What is augmented reality (e-commerce AR/VR) in shopping? Augmented reality in shopping allows customers to virtually try on and test products all through an electronic device.

**Keywords:** e-Commerce, Virtual Reality, Augmented Reality, VR Commerce, AR Commerce



# **11th International Conference**

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# New approach to an aesthetic all ceramic concept for restoration of frontal teeth

S. Jovanovski<sup>1,2</sup>, A. Mijoska<sup>1</sup>, Lj. Marion<sup>2</sup>

1. Department of Prosthodontics, Faculty of Dental Medicine, University Ss. Cyril and Methodius, Skopje, Macedonia

2. Department of Prosthodontics, Faculty of Medicine, University of Ljubljana, Slovenia

**Abstract** This study investigated the new aesthetic all ceramic concept with a double ferrule effect.

**Material and methods.** 36 extracted human maxillary anterior teeth were endodontically treated and divided into 3 groups of 12. Group A, B, and C represented teeth prepared with a 0mm, 1mm, and 2mm new ferrule. As a material, we used Ø 1.4 mm Y-TZP VALL posts with retention rings in the coronary part of the post. The samples were cemented (Multilink Automix, Ivoclar), embedded in acrylic resin blocks (ProBase Polymer/Monomer, Ivoclar), and loaded at an angle of 45° degrees in an Instron Testing Machine 4301 (Instron Corp., USA) at a crosshead speed of 1mm/min until fracture. Fracture loads (N) and modes (repairable or catastrophic) were recorded. Two-way analysis of variance was used for statistical analysis with the level of significance set  $p < 0.05$ . Failure patterns were analyzed in the optical microscope Stereo Discovery V.8 (Carl Zeiss, Germany).

**Results.** The mean values ( $\pm$ SD) for fracture loads were measured (Newtons) for group A - 405.04N ( $\pm$ 100.04); for Group B - 479.01N ( $\pm$ 109.12) for Group E - 719.99N ( $\pm$ 220.02). Failure patterns within those 1.4 mm Y-TZP posts groups revealed a noncatastrophic failure in group A = 100% for 0 mm, group B – 91.7% for 1mm, and 66.7% for 2mm new ferrule.

**Conclusion.** With the limitations of this study, the teeth prepared without, and 1mm new ferrule demonstrated significantly lower failure loads than those with 2mm. The results showed that zirconia posts with new coronal rings and 2mm new ferrule which contribute to increasing the fracture resistance of the restored teeth, show significantly higher fracture resistance. A significantly higher % of repairable fractures was determined in all the experimental groups.

**Keywords:** endodontically treated teeth, zirconia post, ferrule

# Enamel wear caused by monolithic zirconia crowns following one year of clinical use

Dr. MDSc. Genc Zenunaj

TRIAdontics Academy, Amsterdam, The Netherlands

Email: [genczenunaj@triadontics.com](mailto:genczenunaj@triadontics.com)

**Abstract** To compare the amount of tooth wear induced by monolithic zirconia crown restorations placed in posterior region with natural tooth wear on the contralateral side. *Methods:* Fifty-one (51) patients in need for single crown restoration were included in this study. Crown preparation was performed according to clinically indicated guidelines and definitive crown impressions were obtained using PVS material. Gypsum master cast models were fabricated and single crown dies were sectioned. Crowns were milled using a CAD-CAM procedure from monolithic zirconia blocks, **Prettau Anterior Multistratum** (ZirconZahn, South Tirol, Italy) by the ZirconZahn method. The crowns were cemented and adapted intraorally. An impression was obtained immediately following crown insertion of both dental arches. Following one year of functional loading, the patients were recalled to obtain a second impression using the same procedure. The casts models were then optically scanned using a lab scanner (ZirconZahn S600 Arti scanner) and the resulting 3D surfaces were exported in STL file format and imported into CloudCompare reverse engineering software for analysis. The zirconia crown antagonists as well the contralateral tooth antagonists for all 46 cases were segmented and tooth wear was assessed as the negative space (wear surface difference) between the two surfaces. The root mean square (RMS) surface difference in millimetre between the two impressions was quantified. The resulting tooth wear was quantified in an excel sheet and saved for statistical analysis. *Results:* Forty-six (46) patients presented for recall with four (5) dropouts. SPSS statistical analysis software was used for analysis. Mean tooth wear of the zirconia crown antagonist was 12µm (twelve microne) and in contralateral was 11µm (eleven microne. Mean wear of zirconia monolithis crown itself was 9 µm (nine microne) and contralateral tooth to crown was 9 (nine microne) µm following one year of functional loading and the differences were statistically significant at P=0.48. No crowns were lost, chipped or decemented at the follow up visit. *Conclusions:* Within the limitations and the short follow up period of this study, it can be concluded that tooth wear induced by monolithic zirconia restoration did not different from naturally induced wear on the contralateral side. More research is required to corroborate the results of the current investigation.

**Keywords:** tooth wear, monolithic zirconia, dentistry, lab scanner, three-dimensional models

# How often medical errors are reported by health care providers at the Emergency Center in Pristina

Genç Demjaha<sup>1</sup>, Erik Gorani<sup>2</sup>, Kolegji UBT, Fakulteti i Stomatologjisë, Prishtinë

**Abstract. Purpose:** Safety is a fundamental principle in patient care, as well as a key component of quality management of healthcare services. Improving patient safety requires continuous energy, including all persons who have direct or indirect contact with the patient. This means changing the approach to the patient, to the workplace, improving workers' performance, as well as redesigning systems, with the aim of reducing patient risk.

With this approach, almost all disciplines and actors are involved, therefore a complex and multidisciplinary approach is required in the identification of deficiencies initially, the drafting of policies by the responsible institutions, as well as the implementation of policies by health care providers.

**Research method:** For this research, two questionnaires were compiled: One was compiled in order to address patients who sought health services at the Emergency Center. The second questionnaire is designed for the Emergency Center personnel, in order to identify the relationships between the workers, the managerial staff, the problems of reporting errors, and similar.

For this purpose as support were engaged a nurse and a specialist of the Emergency Center who worked in shifts, with the aim of surveying patients, in different parts of the day during the 24 hours.

**Results:** The results of this study show that the majority of patients who come to the Emergency Center are transported either by family members or by a passerby. These patients can suffer many unintentional injuries from inadequate and unprofessional transport. Also, the many patients come directly from the accident site or from respective homes: They are signs that there are problems in the referral system from the levels of Primary Health Care (PHC). Multiple injuries in the head region indicate a need for treatment by a dentist specializing in head and neck.

**Conclusions:** It is noticeable the need to reorganize the working hours for the workers of the Emergency Center. Raising the capacities of the primary care level would reduce the load of the Emergency Center from interventions, which can be handled without a problem at the lower levels.

Continuous professional trainings, as well as trainings focused on stress management, working under time pressure and relationships between health service providers, would significantly improve the level of patient safety in the Emergency Center.

**Keywords:** Patient Safety, Emergency Center, Research (study and analysis), Questionnaire, Medical errors, Adverse events, Safe procedures, Non-punitive reporting.

# The relationship between periodontal and respiratory diseases

Dr. Besir Salihu<sup>1</sup>

Dr. Adelina Salihu<sup>2</sup>

(Doctor of Dentistry, University of Prishtina, Faculty of Medicine),

MD, pulmonology resident at University Clinical Center of Kosovo)

**Abstract :** Periodontal diseases are a variety of polymicrobial infectious disorders, such as gingivitis and periodontitis, which affect the supporting tissues of the teeth and are associated with playing a role in the exacerbation of certain pulmonary diseases. Recent research has shown that periodontal disease is a potential risk factor for cardiovascular disease, including atherosclerosis, myocardial infarction, stroke, diabetes, and respiratory disorders. The anatomical connection between the lungs and the oral cavity makes the latter a potential reservoir of respiratory pathogens. The aim of the paper will be to determine the clinical and epidemiological correlation of periodontal diseases with respiratory diseases, and highlight the role of oral hygiene and its impact on systemic diseases, especially on respiratory diseases.

**Material and methods:** the paper is a review of the literature on periodontal disease and respiratory diseases. The data for this paper were made from university textbooks as well as articles published and archived in PubMed, Researchgate, Google Scholar, United States National Library of Medicine, National Center for Biotechnology Information.

**Results:** The importance of maintaining oral hygiene among patients with chronic obstructive pulmonary disease (COPD) has been emphasized due to its association with periodontitis. Chung et al. in a Korean national study investigated the health records of 5,878 adults and concluded that the prevalence of periodontitis was significantly higher in patients with COPD compared to healthy individuals. Also, a meta-analysis of 14 epidemiological studies revealed a significant association between periodontal disease and COPD.

**Conclusion:** Aspiration of contents from the oral cavity together with poor oral hygiene is considered the main cause of lung abscesses. At the same time, it has been proven that progress in oral and dental hygiene also decreases the incidence of lung abscesses. Treatment of periodontal disease (either by repeated prescription of antibiotics or clinical intervention) may be another way to reduce the incidence of respiratory infections.

**Keywords:** periodontal disease, respiratory disease, oral hygiene, pathogens, lung abscess

# Antibiotic prophylaxis of infections in maxillofacial region

Sinan Rusinovci

UBT - Higher Education Institution, Faculty of Dentistry, Oral and Maxillofacial Department, Kosovo.

**Abstract** The vast majority of dental abscesses respond to antibiotic treatment, however, in some patients surgical management of the infection may be indicated. The aims was to investigate the role and efficacy of antibiotics prophylaxis for the prevention of surgical site infections after periapical surgical approaches caused after failed endodontic treatments. 102 patients were incorporated in the study and additionally 50 patients were included into the study as healthy controls with no concomitant abscesses. The samples were collected from abscess and from healthy side of gingiva of the same patient with abscess and also the samples are taken from the healthy controls from different site of oral cavity. 102 pus samples from patients with dental abscesses were examined for bacterial growth and samples from healthy gingiva of healthy individuals were swabbed for comparison of bacterial etiology. In total 254 swab samples were collected and sent for bacterial inoculation. Isolated pathogenic bacterial were compared and bacteria identified using MALDI-TOF. Bacterial strains were identified in 92 out of 102 patients with dental abscesses. We isolated 16 different bacterial species from 102 patients with dentoalveolar abscesses. In 40 (39.2%) out of the 102 samples only aerobic flora was present, in 16 (15.7%) out of 102 only strictly anaerobic flora, and in 46 (45.1%) out of 102 abscesses mixed aerobic anaerobic flora was isolated. In 61 (50.0%) out of 102 cases same microorganism was identified from healthy side of oral cavity and from the sample of abscesses. In 13 samples of the patients only polymicrobial infections could be evaluated, thus this samples were categorized as the same infection agents as identified from healthy swabs. Isolated oral microorganisms in our study did not vary with significance compared to healthy oral microbiota, thus commensal microbiota were the main cause of dental abscesses. Cultivating and culture testing take time providing results in few days, what is usually too late, and modern methods of microbial identification are expensive. Most of oral microbiota is uncultivable therefore modern methods of identification are necessary, especially at polymicrobial infections. The use of antibiotics for the management of dentoalveolar infections should be considered only in the presence of an increased risk of a systemic involvement or to prevent metastatic infections.

**Keywords:** Dentoalveolar abscesses, Oral microbiota, Maxillofacial surgery, MALDI-ToF/Tof -MS, Bacterial identification.

# Broken instrument in primary mandibular root canal - Case report

Prof. Ass. Nexhmije Ajeti,<sup>1</sup> Dr. Xhevahire Dukaj<sup>2</sup>, Prof. Ass. Xhevdet Aliu,<sup>1</sup> PhD. Merita Barani,<sup>1</sup> Nora Leci,<sup>1</sup>  
Merita Pakashtica<sup>1</sup>

1. University for Business and Technology
2. University Dental Clinical of Kosovo

**Abstract** Root canal therapy like other dental practices can be accompanied with some accidents or unpredictable conditions that are called “procedural accidents”. Broken instrument in the root canal are also part of this procedural accidents. This paper reports a clinical aids for the removal of broken instruments in root canal using a combination of hand and rotary instrumentation. The aim of this study was to present a case report about fracture of instruments in first mandibular root canal. It is concluded, also if the conditions and circumstances exist, as well as the means for removing the instrument, intervention should be carried out.

**Key words:** root canal, broken instrument, removing.

# Cephalgia from orofacial origin - contemporary dental prosthetic treatment

Genc Demjaha, Budima Pejkovska Shahpaska

**Abstract.** Cephalgia from orofacial origin is manifested in patients diagnosed with different etiological factors such as traumatic occlusion, bruxism and loss of occlusal support. Early diagnosis enables its timely removal.

**Aim:** Establishment of contemporary dental prosthetic treatment in patients with cephalgia from orofacial origin.

**Material and methods:** In this study 120 patients were diagnosed, followed, analyzed and treated. They were divided into two groups. The first group consisted of 60 patients, subdivided by etiological factors: traumatic occlusion, bruxism and loss of occlusal support. The second group consisted of 60 patients, representing the control group.

The research was performed in the private polyclinic, Kavaja, Pristina, Kosovo and at the PHI University Dental Clinical Center "St. Panteleimon", Skopje, Republic of North Macedonia.

The diagnosis of traumatic occlusion, bruxism and loss of occlusal support was made with clinical and paraclinical methods. Helkimo Index for dysfunctional changes was applied through anamnestic questionnaires and clinical examinations. A therapeutic approach consisting of three stages was established: first aid, initial therapy and long-term therapy.

**Results and Discussion:** Patients were appropriately treated medically, followed by removal of the etiological factors. Prosthetic restorations, butterfly deprogrammer and stabilization splints were manufactured (except for the control group). This led to overall success and rehabilitation of the treated patients.

**Conclusion:** This study contributes with a contemporary prosthetic clinical approach to cephalgia from orofacial origin. The elimination of pain and etiological factors, preserves the longevity of the definitive prosthetic restorations thus improving patients' quality of life.



# Dental caries of children of the RAE community

Valmira Maxhuni

**Abstract.** The aim of this research was to assess the oral health of children of the Roma, Ashkali and Egyptian communities in the territory of Kosovo.

**MATERIAL AND METHODS:-** 202 children from the RAE community were included in this research. DMFT index for permanent teeth and dmft index for deciduous teeth were evaluated in these children.

**RESULTS-** The dmft index value varies in the range of  $3.38 \pm 3.38$ ; 95.00% CI: 3.39-4.33; average is 4.00; the minimum value is 0.00 and the maximum value is 14.00.

The value of the DMFt index varies within the range of  $2.07 \pm 2.06$ ; 95.00% CI: 1.78-2.36; average is 2.00; the minimum value is 0.00 and the maximum value is 12.00.

Also for  $H = 8.54$  and  $p < 0.05$  ( $p = 0.01$ ) an important and significant difference was found between the dmft index and the frequency of dental visits.

**CONCLUSION---**Difficult economic circumstances are among the main factors of oral health in these children.

# Diode laser application in paediatric dentistry: a minimally invasive treatment option

Elizabeta Gjorgievska

**Abstract.** The lasers are evermore present in dentistry as an adjunct to the conventional dental treatment. The ability to perform less invasive procedures with greater patient comfort makes laser dentistry something every pedodontist should consider. The lecture will focus on the performances of the LaserHF unit (Hager&Werken, GmbH Co., Germany), which consists of two diode lasers with different wavelenghts (660 and 975nm). The 975nm/6W diode laser might be used in variety of applications. In endodontics, it is useful for decontamination of the root canal and has recently been introduces for pulpotomies on deciduous teeth. Additionally, it may be used for activation of bleaching materials, and the possibilities for its use in pedodontics will be elaborated. It is quite effective for a variety of intraoral soft tissue procedures such as gingivectomy, biopsy, operculectomy and frenectomy. The 660nm/25-100mW diode lasers have photobiomodulation (biostimulation) properties. In fact, the Low Level Laser Therapy (LLLT) uses the biostimulating power of light to relieve pain, heal wounds and regenerate tissue. By means of a photosensitizer, the antimicrobial Photodynamic Therapy (aPDT) allows destruction of microorganisms, even in hard-to-access areas, without harming the surrounding tissue. Additionally, LaserHF unit is equipped with two high frequency (HF) handpieces (cut and coagulation mode). HF results in fine, scalpel-like cuts without pressure and risk of necrosis. The wound edges are cut sharp and sterile, and the healing is quick and virtually pain-free. HF surgery is ideal for gingivectomy and gingivoplasty, fibroma removal, as well as for frenectomy. The clinical treatment options of these lasers will be discussed and clinical cases presented, because the minimum intervention is of utmost importance in paediatric patients.

# Surgical approach and arch placement of impacted maxillary canines

<sup>1</sup>Dr. Uran Halimi - <sup>2</sup>Dr. Ardian Salihi - <sup>3</sup>Dr. Selim Baftiu – <sup>4</sup>Dr. Fatos Shahini - <sup>5</sup> Shqipe Krasniqi

Specialisation in Oral Surgery

Specialisation in Oral Surgery

University of Prishtina

Specialist in Periodontology and Oral medicine

PhD candidat, Specialisation in Oral Surgery

**Abstract** Maxillary canines are the second most frequently impacted teeth after molars with an incidence ranging from 1% to 2.5%. It is more often found on the palatine side, it appears twice more in women than in men - 1.17% : 0.51%. Impactions are most often unilateral, but 8% to 10% of cases are bilateral. The causes of impaction can be local or general. The positioning of the canines in the arch depends on: depth in the bone, position, size, angle, etc. If all of these are favorable, then preservation and arch placement of the impacted canines is indicated.

**Purpose:** The purpose of this paper is to show the surgical approach to impacted maxillary canines in cases where their preservation and placement in the arch is indicated.

**Material and methods:** This paper is a review of the literature on the surgical approach of impacted maxillary canines. The research was done using the central databases PubMed, Scopus, Google scholar, etc.

**Result:** Impacted canines can be in 5 possible positions: 1. Palatal localization, 2. Palatal localization of the crown and labial root, 3. Labial crown and palatal localization of the root, 4. Labial, 5. Ectopic. The surgical approach for the purpose of arching the impacted canines can be done in two surgical ways: 1. Closed technique and 2. Open technique

**Keywords:** Canines, impaction, denudation, orthodontic treatment, maxillary impaction.

# The psychosocial impact of aesthetics in prosthodontics patients – Literature Review

Arta Gjikolli, Dukagjin Sokoli\*, Teuta Komoni, Burim Kiseri, Vlora Berisha  
UBT – Higher Education Institution, Faculty of Dentistry, Prosthodontics Department,  
Kosovo

Prosthodontic department

[arta.gjikolli@ubt-uni.net](mailto:arta.gjikolli@ubt-uni.net), [dugagjin.sokoli@ubt-uni.net](mailto:dugagjin.sokoli@ubt-uni.net)

**Abstract.** An important aspect of human life is the psychosocial impact that dental aesthetics has. The psychosocial impact of dental aesthetics questionnaire (PIDAQ) is an instrument that assesses the psychosocial impact of dental aesthetics. It was developed and validated for use on prosthodontic patients. This literature review study aims to collect the results from various studies using PIDAQ in prosthodontics patients throughout the globe. We found a lot of differences in cross-cultural adaption in the way the test was compiled and the division of groups, but also very interesting results between groups separated by gender and level of education. During the re-view of the literature, we found many researches that has excluded men from the survey, which showed some shortcomings. In the surveys done only by women, it has been found that the level of education gives different results. In the other side, there are researches that show that the division into groups separated by the gender has achieved very interesting results. In order to obtain more reliable results, the research should be longitudinal and should involve more years of research.

**Keywords:** Psychosocial impact, PIDAQ, prosthodontic patients, aesthetics, cross-cultural adaption

# Oral parafunctional behaviors among dentistry students

Teuta Komoni, Dugagjin Sokoli \*, Burim Kiseri, Arta Gjikolli, Vlora Berisha  
UBT – Higher Education Institution, Faculty of Dentistry, Prosthodontics Department,  
Kosovo

[teuta.komoni@ubt-uni.net](mailto:teuta.komoni@ubt-uni.net)

[dugagjin.sokoli@ubt-uni.net](mailto:dugagjin.sokoli@ubt-uni.net)

**Abstract:** This literature review study aims to summarize the results obtained from studies related to oral behavior parafunctional habits among dental students. Oral parafunctional behaviors such as nail and pen biting, chewing gum, biting the mucosa of the lip or cheek, and bruxism often come in the form of bad habits that are quite hard to break and are closely associated also with temporomandibular dysfunction (TMD). Despite the causes of pain or tenderness in the jaw, and face, around the year and difficulty in chewing, TMD has a higher impact on social interactions, work opportunities, leisure, and psychological and neurological problems. Whereas the most common method to evaluate parafunctional habits is a standardized oral behavior checklist (OBC), which is being used as a self-reporting mechanism for the identification and quantitative determination of the frequency of jaw use. However, many epidemiological studies have evaluated the parafunctional habits in different age groups, also including dentistry students from different worldwide dental programs. Most of the studies showed higher prevalence of parafunctional habits including bruxism, supporting the hand in the chin and lower chewing nail, biting cheek or tongue in dental students.

**Keywords:** Oral behavior, Dental students, Parafunctional Habits, Temporomandibular dysfunction

# Failure of inferior alveolar nerve block

Ferjal Perjuci<sup>1</sup>, Enesë Morina<sup>2</sup>, Vullnet Fazliu<sup>1</sup>, Nexhmije Ajeti<sup>1</sup>

1. Department of Oral Surgery, Faculty of Dentistry, UBT College, Prishtina

2. Private dental clinic "Jetadent" Prishtina

**Abstract** The characteristic of contemporary dental interventions is that all interventions must be performed without pain. In order to achieve pain control, it is also necessary to achieve adequate and successful local anesthesia. In this way, in addition to the patient having an obvious benefit, this also helps the operator as the treatment can be carried out calmly and without haste, therefore a possible failure of local anesthesia can reflect on both sides. The achievement of local anesthesia in the maxilla has been reported to be higher, this as a result of the porous bone allowing the diffusion of the anesthetic close to the apex of the root, while in the mandible anesthesia is achieved by depositing the anesthetic solution close to the nerve fiber before it enters in the mandible. Inferior alveolar nerve block anesthesia is used relatively frequently for mandibular dental procedures, and failures can occur even when administered by an experienced clinician. In this paper, a review of the literature has been made for the implication of factors that can influence the failure of anesthesia for the inferior alveolar nerve, as well as ways to overcome these factors. Different techniques have their advantages and disadvantages, so the clinician must select the most appropriate technique for a given case.

**Key words:** local anesthesia, inferior alveolar nerve block, failure, anatomical factor, patient factor, technical factor

# Growth indicators and their relation in individuals with different skeletal malocclusions

Pasionare Xharra Budima, Jeta Kiseri Kubati, Lidija Kanurkova

**Abstract:** Growth and development variations among individuals with the same chronologic age have led to necessities of assessing individual biologic maturity. Knowledge and understanding of facial growth and development is fundamental to determine the optimal timing for orthodontic, and dental orthopedic treatment planning. In dentofacial orthopedics, the issue of optimal timing is linked intimately to the identification of periods of favorable growth in structures such as the mandibular condyles or the circummaxillary sutures. Treatment timing during these favorable growth processes can contribute significantly to the efficient and effective improvement of skeletal problems in the individual patient. Aim: To study the correlation between cervical vertebral maturity index (CVMI) according to Baccetti and dental calcification index (DI) according to Demirjian method, in individuals with Class I, II and III skeletal relationship. Compare the data with the chronological age and analyze the reproducibility and reliability of the methods in assessing individual skeletal maturity. Methods: Panoramic and lateral cephalometric radiographs of 100 individuals were evaluated, with age range from 7-19 years. Skeletal maturation stages according to Baccetti method were determined in lateral cephalometric radiographs. DI of upper canines (UC) and lower second molars (LSM) with Demirjian method were evaluated in panoramic x-ray. Digital lateral cephalograms and panoramic radiographs were performed by Vatech and they were analyzed and saved in DICOM format using dedicated software (Easydent version 4.1). Statistical analysis Chi square with  $p=0.05$  and Pearson's correlation coefficient were performed in IBM SPSS version 26 to assess the correlation between CVMI and DI for intergroup comparison. Results: The correlation values range from 0.878 for UC and 0.945 for LSM females, and 0.903 for UC and 0.888 LSM males. Our initial results show that the results are statistically significant with P-values  $< 0.05$ . Sexual dimorphism was found between males and females; females show a slightly earlier skeletal maturity compared to males, class II individuals, especially females, show earlier skeletal maturation. Pubertal growth spurt (CS3–CS4) was longer in Class III subjects than in subjects with normal skeletal relationships. Males show an earlier dental calcification stage compared to females in the corresponding skeletal maturation stage. Conclusion: The initial data suggest positive strong correlation coefficient between CVMI and DI can be used to assess individual skeletal maturity. But to ensure the reproducibility, reliability and validity of the method further data is needed.

**Keywords:** skeletal maturation, cervical vertebral maturation, dental maturation, Demirjian index, growth prediction, chronological age, growth modification, lateral cephalogram, panoramic x-ray

# Neuromodulators in the conservative treatment of tmd

A. Mijoska<sup>1</sup>, S. Jovanovski<sup>1</sup>, Olga Kokoceva-Ivanovska<sup>2</sup>, Daniela Srbinoska<sup>3</sup>, Vesna Trpevska<sup>3</sup>

<sup>1</sup>Department of Prosthodontics, Faculty of Dental Medicine, University Ss. Cyril and Methodius, Skopje, Macedonia

<sup>2</sup>Department of children preventive dental medicine, Faculty of Dental Medicine, University Ss. Cyril and Methodius, Skopje, Macedonia

<sup>3</sup>Department of ortodontics, Faculty of Dental Medicine, University Ss. Cyril and Methodius, Skopje, Macedonia

**Abstract** The second most common orofacial pain in the population aged 20 - 45 years is the pain from TMD. Etiopathology of the diseases is complex, but the symptomatology is similar and they are presented with symptoms originating in the joint and masticatory muscles. The aim of the study was to evaluate the effectiveness of neuromodulator botulinum toxin in TMD treatment for relieving chronic pain and muscle spasm.

**Material and methods:** As part of the conservative, conventional therapeutic protocol for the treatment of bruxism manifested by hyperactivity, hypertrophy and chronic pain in the masticatory muscles botulinum toxin type A (Dysport 300, Ipsen, UK) was administered bilaterally, in three points, a total of 40 units in each muscle in two consecutive sessions.

**Results:** After a period of 2 weeks required for the full action of the toxin, the patient recorded a significant reduction in pain and infrequent episodes of clenching and grinding of the teeth. Control examinations were performed after 1 and 3 months. Mild hypotrophy of the muscles with reduced gonial angle of the mandible change was observed bilaterally in both masseters.

**Conclusion:** Neuromodulator botulinum toxin can be successfully used in conventional therapy of muscle disorders due to minimal invasiveness, reversibility and minimal side effects.



## Oral mucocele case report

Lumturije Asllani Hashani, Merita Barani, Merita Pakashtica

**Abstract** The most frequent lesions of the oral mucosa are mucoceles (muco - mucus and coele - cavity). They are cysts filled with mucus. They are caused by the accumulation of mucus in the minor salivary glands, as a result of trauma, lip biting or changes in the minor salivary glands. They are benign tumors of the soft tissues of the oral cavity and cause obstacles in speech and mastication. According to histological characteristics, they are mainly divided into two categories: retentive and extravasal. Mucoceles can develop anywhere on the oral mucosa, including the lip, cheeks, and floor of the mouth, but they most commonly affect the lower lip. Mucoceles most commonly affect young adults, however they can affect people of any age. They can be soft in consistency, with cystic swelling transparent or blue in color. The most common treatment of mucoceles is the surgical method.

# The Influence of Estrogen on Pregnant Women during the Three Trimesters of Pregnancy

Behluli E<sup>1</sup>, Dragidella D<sup>2</sup>, Kamberi A<sup>3</sup>, Temaj G<sup>4</sup>

<sup>2</sup>University of Prishtina, Medical Faculty, Dentistry School, Department of Periodontology and Oral Medicine, Prishtina e-mail: [edon.behluli@uni-pr.edu](mailto:edon.behluli@uni-pr.edu),

<sup>2</sup>University of Prishtina, Medical Faculty, Dentistry School, Department of Periodontology and Oral Medicine, Prishtina

<sup>3</sup>Alma Mater Europaea Campus College “Rezonanca” Prishtina

<sup>4</sup>Gazmend Temaj College UBT, Faculty of Pharmacy, Prishtina, Kosovo

**Abstract.** Oral hygiene during pregnancy is an important but often neglected system. Oral health plays pivotal role in the outcomes of a pregnancy; but many pregnant women are unaware for this fact or accord less attention. We have made search in different data bases to find a paper when are described different protocols for oral health and influence of hormones such as estrogen during first and second trimester in pregnant women.

**Keywords:** Estrogen, Progesterone, Oral Hygiene, Pregnant Women

# The Impact of Prosthetic Treatment on Patients with Disabilities – Literature Review

Dugagjin Sokoli, Vlora Berisha, Teuta Komoni, Arta Gjikolli, Burim Kiseri, Genc Demjaha  
UBT – Higher Education Institution, Faculty of Dentistry, Prosthodontics Department,  
Kosovo

[dugagjin.sokoli@ubt-uni.net](mailto:dugagjin.sokoli@ubt-uni.net)

**Abstract:** The primary purpose of prosthodontics treatment is to improve oral health, function, and aesthetic appeal for individuals and groups using various dental prostheses. According to the 2011 World Report on Impairment by the World Health Organization (WHO), Due to aging populations, social disability will become an issue of increasing concern in the coming years. Even simple tasks, such as cleaning one's teeth, might be troublesome in prosthodontic therapies for people with special needs. In general, individuals with disabilities have poor health, less education, fewer economic possibilities, and higher levels of poverty than those without impairments. Concerns exist with oral health and overall dental care access for the same reasons. Historically, patients with mental, social, and physical disabilities were excluded from prosthodontics since various specific and general problems that they show allegedly prevented the application of implants as an element of dental treatment. (7) However, these patients need oral fixed rehabilitation since neurologic impairment, neuromuscular conditions, genetic abnormalities, and oro-craniofacial malformations are associated with a higher incidence of dental agenesis and the inability to maintain sufficient oral hygiene. In the prosthodontic literature, studies have revealed changes in quality-of-life scores for socially impaired patients treated with single crowns, fixed dental prostheses, and removable dental prostheses, both with and without implants. Oral health is an essential component of overall wellness. To improve the oral health of people with disabilities, whether those limitations be social or intellectual, all dental specialties must be involved. It may be of future interest to investigate how the forms of prosthodontic therapies influence the oral microbial status in the context of oral health and disease in this special needs cohort.

**Keywords:** prosthetic treatment, social disability, physical disability, mental disability, quality of life

# The influence of systemic drugs affecting the process of osseointegration of dental implants

Vullnet Fazliu, Aferdita Gashi-Rizaj,

Department of Oral Surgery, School of Dentistry, UBT College ,Prishtina ,Kosovo

Department of Pediatric Dentistry, School of Dentistry, UBT College, Prishtina ,Kosovo

**Abstract:** The process of osteointegration of dental implants is a biological process in which systemic therapy can interfere, which affects the anabolic and catabolic processes of the bone and consequently leads to the failure of the implant. The purpose of the literature review has to do with certain groups of systemic drugs that have a direct impact on this process. Some of the systemic drugs that have a direct impact on the osteointegration processes of dental implants are: selective serotonin reuptake inhibitors, bisphosphonates, non-steroidal anti-inflammatory drugs, proton pump inhibitors, glucocorticoid drug. SSRIs - cause bone loss by inhibiting bone remodeling processes. Bisphosphonates - associated osteonecrosis occurs after dental implant surgery. Non-Steroidal anti-inflammatory drugs - Non-steroidal anti-inflammatory drugs and their impact before implant placement has to do with the inhibition of cyclooxygenase COX-enzymes and consequently inhibits the inflammatory mediators Prostaglandins, which play the main role in bone metabolism. Proton pump inhibitors- negatively affect the process of osteointegration of dental implants in such a way that they affect the absorption of Calcium as well as the activity of osteoclast. Glucocorticoid drug- Increasing the humane serum levels of glucocorticoids in vitro to supraphysiological doses decreases the ability of osteoblasts to differentiate.

**Keyword :** Osteointegration; Bisphosphonates; Drug related; Non-steroidal anti-inflammatory drug; SSRIs, Proton pump inhibitors, Dental failure.

# The role of the removable partial dentures and it's design

Linda Dula

**Abstract** Removable partial denture has a wide and varied application in the treatment of partially edentulism. They represent an acceptable and quite economical treatment modality for patients with partially edentulism and relatively fulfill the functional and aesthetic requirements. The design of the removable partial dentures is based on biomechanical factors, giving priority to principles such as: retention and stability. The basic biostatic problem in partially denture planning is the uniform distribution of occlusal forces and other forces in the periodontium of the remaining teeth and the mucoperiosteum of the alveolar ridge. In relation to the ratio of retention and stabilization of removable partial dentures, the opinion of many authors is that "*we must stick to the fact that we will made removable partial dentures with minimum retention and maximum stabilization*". On the other hand, maximum retention can have a harmful effect on the supporting abutment tooth, but also the large number of stabilizing elements can reduce the patient's sense of comfort, and form conditions for dental plaque retention. In this lecture, we will talk about the role of removable partial dentures in the periodontium of abutment teeth, the measurement of the retentive force of the removable partial dentures and the determination of masticatory efficiency, as well as the comparison of the results of different authors with our results.

# The method of predicting the position and determining the difficulty of treating the impacted maxillary canine - Case presentation

Gentian Bibaj<sup>2</sup>, Teuta Ademaj<sup>3</sup>, Jeta Kubati<sup>1</sup>, Donika Peci<sup>4</sup>,  
UBT College, Faculty of Dentistry, Pristina

**Abstract** Impacted maxillary canines present a frequent clinical problem in orthodontics. Management and final aligning require not only careful therapeutic planning but also a multidisciplinary approach, accurate diagnosis and specific anchorage requirements. The purpose of this paper is to present the method that helps us predict the position and evaluate the difficulty of the final alignment of the impacted maxillary canine. Method and material: The method according to Stivaros et al, has been shown to be quite practical in daily clinical work. Based on this method, in this paper is presented the planning and treatment of the 16-year-old subject with two impacted maxillary canines, with Roth .022"fixed technique. Result: Determination of the position and treatment planning as well as the application of the correct mechanics of fixed orthodontic treatment resulted in optimal alignment in the subject presented in this paper. Surgical procedure is reviewed with latest literature Conclusion: Considerations of diagnosis, work plan and method, technique, anchorage planning and collaboration with the surgeon are essential in these types of orthodontic treatment.

**Key words:** Impacted canine, fixed technique, anchoring

# Treatment dilemmas in maxillary lateral incisor hypodontia; opening or closing the space?

*Antigona Thaqi<sup>3</sup>, Erik Gorani<sup>4</sup>, Jeta Kubati<sup>1</sup>, Donika Peci<sup>2</sup>,*

UBT College, Faculty of Dentistry, Pristina

**Abstract** The phenomenon of hypodontia of the maxillary lateral incisor is not a rare condition in our daily practice. A lot of factors need to be considered when developing a treatment plan for missing lateral incisor cases. Growth, occlusion, aesthetics and also financial considerations in proportion to the patient's benefits. Aim The intention of this study is to discuss alternative methods of treatments for hypodontia of maxillary lateral incisors, the cons and pros. Method and material Treatment methods include closing the residual space with fixed orthodontic appliance and in the other case the opening of the required space and replacing two missing laterals with dental implants followed by placement of single -unit crowns Results In first subject, dental implants have substituted missing laterals, but the aesthetic dilemma remains subject to be discussed due to multifactorial stages on which aesthetic and prosthetic finalization depends. On the other hand, in second subject, closing the excess spaces and mesializing the canines in the place of the missing lateral incisors brings comfort to the patient, but how much the frontal aesthetic aspect can be improved depends on other factors such as the construction of soft and hard tissues of the patient, the individual shape of the jaw as well as the amount of bone in the premaxilla. Conclusion Hypodontia of one or two maxillary lateral incisors represents a major aesthetic problem for the patient. Treatment planning should include a multidisciplinary approach and finally decide together with the patient the method that will have the most optimal result, considering growth, occlusion and most important the patient's expectations.

**Key words:** lateral incisor hypodontia, dental implant, fixed crown

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# Incidence of presenting hepatitis A in the Peja Regional Hospital during 2019-2020

Afrim Zeqiraj<sup>1</sup>, Melisa Zogaj<sup>1</sup>, Zafer Gashi<sup>1</sup>,

<sup>1</sup>UBT-Higher Education Institution, Faculty of Nursing, Lagjja Kalabria, p.n.  
10000 Prishtine, Kosovo

## Abstract

**Introduction:** Hepatitis is a very common inflammation of the cells of the liver. Hepatitis can be temporary (acute) or long-term (chronic) depending on whether it lasts less than or more than six months. The hepatitis A virus infects humans and some primates and is the cause of infectious hepatitis. **Purpose and objectives:** Viral hepatitis infections are also present in our country, so the purpose of working on this topic is to expand knowledge in terms of: Viral Hepatitis A, Their Epidemiology, and Preventive Measures. **Materials and Methods:** In the realization of this paper, the method of literature review was used, in addition, information was presented on the number of patients with viral hepatitis A in the regional hospital of Peja, Republic of Kosovo for the period 2019/2020. **Results:** From the results obtained it is clear that the number of patients with Hepatitis A was low and thankfully in non-significant values. However, the fact that the number of Hepatitis B patients is increasing, and especially the increase in the number of Hepatitis C cases, remains a matter of concern, and it is worth noting that care should be taken to prevent the spread of these viruses at a very high rate. **Conclusion:** Given the risk posed by these infections, the prevention of viral hepatitis requires an organized and ongoing program of education and treatment. **Recommended measures for the prevention of viral hepatitis are:** Ensuring adequate sanitary and personal hygiene. Drink only water that is controlled, Avoiding drinking alcohol, Avoiding any non-particularly recommended medication acetaminophen (Tylenol) and sedatives for 3-12 months because such medications are hepatotoxic, Frequent breaks during the day and a good night's sleep. Eating small, frequent, high-carbohydrate, low-fat meals. Following the guideline for preventing the transmission of the disease to patients and other persons who are not infected, Timely immunization reporting all cases of hepatitis to the health department.

**Key words:** hepatitis A, B, C, HBV.

# **The potential of electromagnetic radiation in the living environment and possible risks for the living world and human health - case study in the Republic of Kosovo**

Lulzim Thaçi<sup>1</sup> Shpëtim Kastrati<sup>2</sup>

Faculty of Radiology, UBT – Higher Education Institution, Neighborhood  
Kalabria, p.n, 10000, Prishtina, Republic of Kosovo.

Faculty of Education, University of Prishtina, Rr. Agim Ramadani, p.n. 10000  
Prishtina, Republic of Kosovo

**Abstract** Electromagnetic waves are waves with a considerable energy, which also depends on their source. This energy easily penetrates even living organisms. In the scientific world, the abundant electromagnetic radiation that surrounds us is also called electromagnetic pollution, then this study aims to make a sufficient contribution to the awareness of the possible reduction of this pollution or even the possible protection from the effects of electromagnetic radiation in the living world and especially in human health, for which many researches have concluded that it directly affects the various effects such as; raising the temperature of the brain, increasing stress, loss of human concentration, insomnia, the impact of the increase in the effects of some chronic diseases, etc. This study is mainly based on the results of the research cited in the paper, and for comparison, some measurements of the electromagnetic fields created by some devices, which we use more often in daily life, were made, and the results of these measurements were compared with the measurements of researches that have confirmed concrete results regarding the possible impact factors on human health and biological life in general. For these measurements, the PocketLab Voyager device was used and the measurements of the values with a graphical presentation were presented and analyzed in the continuation of this study..

**Key words:** Electromagnetic pollution, Effects of radiation, Electromagnetic radiation, Human health.

# Research of the genetic relationships of the albanian tribes in presheva

Naser Kamberi<sup>1</sup>, Hyzer RIZANI<sup>2\*</sup>

<sup>1</sup>Direction Dentistry-Prishtina, University of Business and Technology (UBT),  
Calabria, 10000 Prishtina, Kosovo.

<sup>2</sup>University of Business and Technology (UBT) - Food Sciences and  
Biotechnology- Calabria, 10000 Prishtina. R. of Kosovo- mn.-+38345111044

Corresponding Author: Assistant professor e-mail: \*hyzer.rizani@ubt-uni.net

**Abstract** In this work have been presented reports about genetic closeness between Albanian tribes. During the investigation it is verified that in Presheva municipality live these tribes: Krasniq, Sop, Gash, Thaç, Berish, Shaljan, Morin, Kelmend and Kryezi. These tribes were evidenced during the interview of all the families at municipality of Presheva. Throughout these tribes we collected biomorphological qualities such as the free ear lobe or stick 6075 individual, language cartridge or not 6082 individual, the left arm over the right arm or the right arm over the left 6070 individual, the right thumb over the left thumb and reverse 6073 individual and the hole in the chin or without it 6038 individual. During the accounting frequencies of dominant genotype and recessive, dominant allele and recessive and during the comparison of the results obtained we can give a conclusion that tribes are close to one another.

# The Role of Proton Pump Inhibitors in the Treatment of Barrett's Esophagus

Zaim Gashi<sup>1,2</sup>, Arjeta Gashi<sup>3</sup>, Fadil Sherifi<sup>2</sup>

<sup>1,2</sup>UBT College, Prishtina, Rep. of Kosova

<sup>2</sup>UCCK, Clinic of Gastroenterology and Hepatology, Prishtina, Rep. of Kosova

<sup>3</sup>PharmItalia, Prishtina, Rep. of Kosova.

**Abstract** Gastroesophageal Reflux Disease (GERD) is accepted as an exemplary etiological factor for Barrett's esophagus (BE), which is a major predisposition to esophageal adenocarcinoma. Due to the risk of chronic heartburn progressing to Barrett's, endoscopy every five years is recommended for people with chronic heartburn, or who take drugs for chronic GERD. The proton pump inhibitors (PPI) class is the most potent type of acid suppression therapy. Aim: To evaluate the efficacy of PPI in the regression of histopathological changes in patients with Barrett's esophagus. Methods and patients: in this prospective treatment research, 50 patients were included, of which 40 were with intestinal metaplasia (IM) and 10 patients with low-grade dysplasia (LGD). All these cases with BE, have been verified histopathologically in two histopathological centers: Prishtina and Skopje. Eventual regression was evidenced after 2 years of PPI treatment at maximum doses, also through histoaptological verification. The data have been statistically processed and presented in the respective tables and graphs. Results: Of the 50 patients with BE according to histopathological type 40 or 80.0% were IM, 10 or 20% were LGD (low grade dysplasia) and there was no case of HGD (high grade dysplasia). Of the 40 IM patients at the beginning of treatment, after two years of treatment only 20 or 50.0% were IM, 4 or 10.0% were LGD and 16 or 40.0% were NERD ((Nonerosive reflux disease). Of the 10 LGD field patients two years only 5 or 50.0% were LGD, 2 or 20.0% had IM and 3 or 30.0% had NERD. According to the histopathological type and the presence of disease regression in patients with BE, we did not receive a significant difference (Fisher Exact test,  $P = 0.487$ ). 40.0% of patients in the IM group and 50.0% of patients in the LGD group had regression. Conclusion: The effect of PPI in regression of cases with LGD shows that this microscopic evidence was not irreversible. We found that PPI therapy appeared beneficial in preventing the development of low-grade dysplasia in Barrett's oesophagus.

**Key words:** Intestinal metaplasia, LGD, endoscopy, regression

# A review of the development process of health services in Kosovo in the past

Marigonë Rizani<sup>1</sup>, Zekirja Shabani<sup>2</sup>,

<sup>1</sup>Faculty of Nursing, UBT College, Prishtina, Kosovo.

<sup>2</sup>PhD Candidat at Istanbul University; Researcher at the Albanological Institute, Prishtina, Kosovo.

**Abstract** Today, societies are experiencing a process of development and change in a continuous search for health services that are growing rapidly due to various diseases, including pandemics such as Covid 19. This research is based on society's past experiences and interactions with the environment, thus on its historical process. As mankind has encountered a series of diseases and epidemics in the past and present, the approach to health has changed and evolved greatly as a result of the consumption of resources, experience, reform movements, and so on. This change and evolution involve scientific progress in relation to illnesses, procedures, treatments, and management. This paper goes back in time to provide information about health services in Kosovo at the end of the 19th century and the beginning of the 20th century. Although epidemic management has changed from country to country in the 21st century, through this study we will see that such practices have been applied in the past. This study, which relies on papers from the Ottoman Archive and related literature, also intends to give information on the extent of health services, the administration of epidemics such as cholera and smallpox, and the health infrastructure in Kosovo during this time period.

**Key words:** Health Services, Health Management, Hospitals, Epidemics, etc.

# "Rehabilitation of adolescent idiopathic scoliosis with the schroth method and yoga therapy"

Ardiana Hajdari<sup>1</sup>, Arsim Hajdari<sup>2</sup>

UBT-Higher Education Institution, Faculty of Nursing, Lagjja Kalabria, p.n. 10000  
Prishtine, Kosovo

<sup>1</sup>Faculty of Nursing , UBT College, Prishtina, Kosovo

<sup>2</sup>Faculty of Nursing ,UBT College Prishtina, Kosovo

**Abstract** Scoliosis is called idiopathic when no other underlying disease can be identified. Adolescent idiopathic scoliosis is present in 2 to 4 percent of children between 10 and 18 years of age. It is defined as lateral curvature of the spine greater than 10° accompanied by vertebral rotation. The therapeutic goal in children is to prevent progression. In children, scoliosis of 20° or more should be treated with orthosis and scoliosis of 45° or more with surgery. Purpose: The purpose of this scientific paper is to compare and obtain scientific data for the rehabilitation of adolescent idiopathic scoliosis with the Schroth method and Yoga therapy. Methodology: Data collection was done from the protocol of patients with scoliosis treated at The University Clinical Centre of Kosovo in the Physiotherapy Clinic during the period January 2022- to April 2022. Other data sources were obtained from PubMed, academia.edu, research gate, etc. using key scoliosis, adolescent scoliosis, Schroth method, yoga therapy for scoliosis. Where randomized controlled trials, reviews, clinical trials are included. Results: The number of patients aged 10-18 years who were treated at the Physiotherapy Clinic is 11 (N=62) or 17%. The most affected gender is the female gender 64% (N=62), also in the age group 10-18 years we have 73% (N=11) cases of the female gender. As for the scientific data for the treatment of scoliosis, we have more scientific data for positive results of Schroth exercises in addition to Yoga therapy. Conclusions: Based on the content analysis, quality of evidence and study results there is little to moderate evidence for the effect of Yoga Therapy in addition to the Schroth method. Physiotherapists should be trained in the Schroth method, as well as school screening for scoliosis, to know the frequency of occurrence in Kosovo in order to prevent later complications and deformities, which will have lower financial costs compared to treatment and rehabilitation after the age of 18.

**Key words:** scoliosis, adolescent idiopathic scoliosis, Schroth method, Yoga therapy.

# Mental health in patients with cancer

Gani Halilaj<sup>1</sup>, Djellza Gajtani<sup>2</sup>,

<sup>1</sup>UBT-Higher Education Institution, Faculty of Pharmacy, Lagjja Calabria, p.n.  
10000 Pristina, Kosovo

<sup>1</sup>Institute of Forensic Psychiatry, Pristina, Kosovo

<sup>2</sup>Student of UBT, Institution of Higher Education

**Abstract** Cancer is a disease that not only affects the body, but can also affect the human mind, and most of those diagnosed with cancer experience significant changes with their emotional health. The main goal of this paper was to have as much knowledge as possible and to understand all the psychological changes and mental health in patients who are diagnosed with cancer. To achieve the goal, the quantitative method was used as the main methodological approach. This research included a sample of 50 participants who come from different countries of Kosovo and are also elderly people. From this research it is concluded that women mostly experience psychological concerns, they have a greater tendency to show the feelings of experiencing the situation after being diagnosed with cancer, also they are freer to communicate and discuss with family members and social circle. Men have suppression of the expression of emotions and are much more shy.

**Key words:** Cancer disease, emotional problems, mental health, communication.



# Breast Hamartoma

Emine Devolli Disha

UBT College- Higher Education Institution

**Abstract** Breast hamartoma is a benign, slow-growing tumor that can occur at any age. Breast hamartoma is also known as fibroadenolipoma, lipofibroadenoma or adenolipoma, depending on whether it is composed of glandular, fatty or fibrotic tissue. Breast hamartoma has an incidence of 0.1% to 0.7% of benign breast tumors. It is now more frequently diagnosed because of the breast diagnostic procedures such as ultrasound and mammography. In this study I present a case of 47 years female patient, with recent history of palpable right breast mass. The patient was examined clinically, with ultrasound, mammography and core needle biopsy. With ultrasound were analyzed echosonographic features of the mass: shape, borders, echostructure, retrotumoral acoustic phenomenon and tumor compressibility. Ultrasound showed in the lower inner quadrant of the right breast, well circumscribed mass 3.4 cm x 1.7cm, with heterogeneous hyperechoic internal echo texture with echogenic halo without retrotumor acoustic phenomenon. This mass was easily compressed with a transducer. Mammography was done in the mediolateral oblique and craniocaudal view. Mammography showed a well circumscribed ovoid mass, around 3.4cm x 1.7cm with mixed, heterogeneous density (fat and soft tissue) with a mottled centre, with no evidence of microcalcification. We have also done spot magnification views, where we have seen lack of intrinsic density. Core needle biopsy of the mass was performed under ultrasound. The pathologist microscopically saw dysplastic glandular structures of the lobules and ducts, with a pronounced fibrotic stroma without neoplastic features. The histopathological analysis was hamartoma and the pathologist suggested to do excision of the mass. The patient refused the operation, and decided to follow-up. After 3 years of follow-up with ultrasound and mammography, the breast mass had the same size. Conclusion: Biopsy of the hamartoma and histological examination is necessary for a differential diagnosis to exclude malignancy. Breast hamartoma biopsy is recommended when the diagnosis is uncertain or the patient has complaints. In general, hamartoma has a good prognosis with or without surgical excision.

**Key word:** Hamartoma, breast.

# Metastatic hydatidiform mole in lung and massive hemothorax : a case report

Shqiptar Demaçi<sup>1,2</sup>, Lumturije Gashi - Luci<sup>2</sup>, Eliza Kastrati<sup>2</sup>, Nazmi Kolgeci<sup>2</sup> Fisnik Kurshumliu<sup>3</sup>, Sueda Latifi<sup>4</sup>,

<sup>1</sup> University for Bussines and Technology-Prishtina, Kosova

<sup>2</sup> University Clinical Center of Kosova, Clinic of Thoracic Surgery, Prishtina, Kosova;

<sup>3</sup> Institute of Pathology, Prishtina, Kosova; <sup>4</sup> Gynecological and Obstetrical Clinic, Prishtina, Kosova

**Abstract** A 30 –year –old woman, nulliparous, accepted to Gynecologic Clinic because of planned operation of pelvic tumor. State after four-fold endometrial curettage done between several months. It is diagnosed as mola hydatidosa . Main signs and symptoms were severe generally appearance, slight hypotension, slight tachycardia, T-negative in V-2 and V-3 derivations, cold sweats, tachypnea , prostration, slight vaginal bleeding and severe anemia. Weak auscultatory sound in right chest and anechogenic appearance in ultrasound of right costo-phrenical sinus is confirmed with blood in pleural puncture. Chest tube drainage evacuates 1000 ml of defibrinated blood and revealed continual fresh blood hemorrhage. Thoracic CT –scan reveal a great massive shadow with right compressive atelectasis of right lung. Urgent right thoracotomy solves massive clots and fresh hemorrhage. In lower right lobe it's seen hemorrhagic tumor with dimension 3x 2 cm and one smaller subpleuraly-1 x 1 cm, both excised with wedge resection. After reexpanding of right lung she was turned into gynecologic ward. Serum level of human chorionic gonadotropine (hCG) values 2.40 IU/L. Histopathologically is confirmed metastatic hydatidiform mole in lung . After recurettage it's started with chemotherapy according to protocol.

**Key words:** Massive hemothorax, Metastatic h ydatidiform mole, Lung metastasis.

# Pap smear as a method in prevention and diagnosis of cervical pathology in Region of Prishtina

Hana Xhema-Bejqi<sup>1,2</sup>, Shqipe Agushi<sup>1</sup>, Nafije Pajaziti<sup>1</sup>, Blend Bejqi<sup>3</sup>

<sup>1</sup>Kolegji UBT University for Business and Technology, Medical School, Prishtina, Kosovo

<sup>2</sup> Main Center of Family Medicine, Prishtina, Kosovo

<sup>3</sup> University of Prishtina, Medical School, Prishtina, Kosovo

**Abstract** Introduction The Papanicolaou test - Pap test or Pap smear is a method of cervical screening used to detect potentially precancerous and cancerous processes in the cervix. The collected cells are examined under a microscope to look for abnormalities. The test aims to detect potentially precancerous changes as a cervical intraepithelial neoplasia (CIN) or cervical dysplasia; the squamous intraepithelial lesion system (SIL) is also used to describe abnormalities caused by human papillomavirus, a sexually transmitted DNA virus. Pap smear screening is recommended starting around 21 years of age until the age of 65. Guidelines on frequency vary from every three to five years. If results are abnormal, and depending on the nature of the abnormality, the test may need to be repeated in six to twelve months. If the abnormality requires closer scrutiny, the patient may be referred for detailed inspection of the cervix by colposcopy, which magnifies the view of the cervix, vagina and vulva surfaces. Aim of presentation is to present our results using Pap test in the primary care at the region of Prishtina region in detecting potentially precancerous and cancerous processes and other pathology in the cervix. Results: During the period January 2021 and July 2022 in 510 women, aged from 24 to 66 years, mostly from Prishtina city (413 women or 81% where from Prishtina and in 97 or 19 % from rural area) Pap smear was done. From the total number, in 68 of them colposcopy was performed. Reason for colposcopy in 52 women or 76% was atypical squamous cells of undetermined significance (ASCUS), in 15 women or 22% was high grade intraepithelial lesion (HSIL) and in one case invasive cancer was found. In both groups with HSIL and with invasive cancer during the colposcopy also biopsy was done and suspected diagnosis was confirmed. Patient with invasive cancer was referred at the Oncology Clinic. Conclusion In region of Prishtina at the primary care Pap smear is widely performed since 2016. Basing on the cost and on the achieved results in diagnosis such pathologies we propose to include this test in all Kosovo as a prevention and diagnostic method in precancerous and cancer pathology

**Key words** Pap smear, cervical screening, colposcopy, cervical cancer.

# The influence of social and cultural factors on the risk behavior of adolescents in terms of drinking alcohol

Mirlinde Bilalli & Emire Bilalli  
UBT College, Republic of Kosovo  
Elementary school "Perparimi"

**Abstract** Introduction. Most of the diseases among adolescents are as a result of risky behavior related to alcohol consumption habits. There are many reasons, motives, needs and situations in which children of school age (adolescents, teenagers) may start and later continue with risky behavior in the sense of early start of consuming alcohol to the point of intoxication. The purpose of this research is to determine the impact of social and cultural factors on the risky behavior of adolescents regarding the aspect of drinking alcohol, which will contribute in designing preventive programs for health promotion to young people. Material and methods. For the purposes of this research, a survey questionnaire was used from the Global Survey of Adolescent Health. It is a standard questionnaire of CZO and CDC that contains 24 questions covering cigarettes, alcohol consumption and drug use. The questionnaire was designed so as to correspond to the age and gender of the respondents. The statistical analysis of the data obtained from the research was done in the statistical program SPSS 17.0. Categorical (attributive) variables are shown with absolute and relative numbers. Numerical (quantitative) variables are shown with an average, minimum values, maximum values, and standard deviation. For comparing rates between children who consume and who do not consume alcohol Student's t-test was used. It was used to determine statistical significance level of  $p < 0.05$ . Results and discussion. The research included 600 respondents, students from primary and secondary schools in the territory of the Pologi region. The structure of the respondents consisted of 264 (44%) male and 336 (56%) female students. The ethnic structure of the students consisted of 300 Macedonian and 300 Albanian students, 172 (28.67%) were students from the 9th grade, 203 (33.83%) from the 1st year of high school and 225 (37.5%) were students from the 2nd year of high school. Conclusion. Obviously, the vendors do not consider it a problem as they sell alcohol uncritically to minors. In particular, only one in five of our respondents were turned away when buying alcohol where the seller referred to their youth. So, in our country, minors can buy alcohol without a problem, in violation of the legal regulation, which is obviously not known to the sellers.

**Key words:** students, drinking alcohol, gender, religion.

# Cow's milk anaphylaxis in breast-fed infants

Xhevat Kurhasani<sup>1</sup>

<sup>1</sup>UBT-Higher Education Institution, Nursing Faculty, Lagjja Kalabria, p.n. 10000  
Prishtine, Kosovo

**Abstract** Background: Cow's milk proteins holds the third place in frequency as a cause of food allergy during infancy, after eggs and fish. Although, it's not the most frequent cause of food allergy, the cow's milk, is the first foreign food with which the infant comes into contact, after breast feeding or from the first day of life when the breastfeeding is not possible. Case presentation: An 8 months old infant with history of wheezy bronchitis/asthma has developed three times. severe anaphylactic reactions. Two times after ingesting a formula containing casein hydrolysate which caused anaphylaxis with ED admissions in regional hospital and the third time anaphylactic reaction occurred after breastfeeding when an infant was referred to higher health institution for diagnoses and treatment. The fact that anaphylaxis occurred after breastfeeding misled physicians toward accurate diagnosis and the infant was exposed to unnecessary diagnostic procedures. Conclusion: The reported case is important in demonstrating that allergy/anaphylaxis to cow's milk protein can also occur in breastfed children. It also, emphasizes the need to take this allergic phenomenon into account during diagnostic workup.

**Key words:** allergy, anaphylaxis, diagnoses, milk proteins

# The role of law enforcement institutions in monitoring and implementing legal regulations in the field of health data and statistics in Kosovo – case study

Naser Rugova

[naser.rugova@ubt-uni.net](mailto:naser.rugova@ubt-uni.net), University for Business and Technology, Prishtinë,  
Republic of Kosovo.

**Abstract** The collection, administration, processing and distribution of medical data and statistics has a significant impact on the assessment of public health parameters. The aim of this paper is to reflect the real state of monitoring and implementation of legal regulations by the Health Inspectorate of Kosovo regarding the collection, systematization, analysis, reporting, storage and elaboration of medical data and statistics in Kosovo. Methodology: The research strategy is accompanied by a deductive approach, and it is an appropriate procedure to answer questions such as: Who, what, where and how you are doing it. In this study we used the qualitative method - standardized and semi-standardized interviews with director and inspectors of Health Inspectorate. We have also applied the quantitative method by applying instruments such as questionnaires which are designed for the focus group of specific institutions and disciplines that have been the subject of research work on this paper. Results: To validate the hypotheses and research questions of this research mixed methodology we used certain instruments. Through questionnaires, we interviewed the health inspectorate as a monitoring and law enforcement mechanism in the health system of Kosovo, and assessed their attitudes towards the current health system regulations in Kosovo. The respondents evaluate the legal framework that regulates and covers the system of health statistics in Kosovo as inadequate. Conclusions: Findings from research indicate the need to supplement the amendments of a number of basic laws of the health system and other laws that have an impact on improving the quality, increasing the degree of accuracy and useful use of health data and statistics in Kosovo.

**Key words:** Legislation, statistics, monitoring, implementation, inspectorates.

# Release of Severe Postburn Contracture of Index Finger with Two-stage Reconstruction

Zejnë Buja, Ideal Krekaj, Korab Berisha, Besnik Deliu.

Department of Plastic, Reconstructive and Aesthetic Surgery, UCCK, Prishtina  
Kosovo.

**Abstract** Postburn contractures are the result of deep burns that are not treated properly and promptly. Severe contractures require more than one surgery to be completely relieved. Their surgical treatment is very difficult and challenging for reconstructive surgeons. Case report: The author presents a case with a severe postburn flexor skin contracture of the index finger of the left hand at the level of the metacarpophalangeal, proximal interphalangeal, and distal interphalangeal joints. The contracture at the DIP joint where with an angle of 110 degrees, which was released with a full skin graft in two-stage of reconstruction. Conclusion: The application of this procedure enables the complete release of severe contractures and protects the fingers from their loss as a result of the shortening of vascular structures. The described technique has yielded very good reconstructive results, enabling a complete release of a severe postburn contracture with a satisfactory restoration of joint function.

# Nursing care of patients with hemodialysis in peja general hospital

Trendeline Pllana & Time Shabanaj

**Abstract** The Dialysis is a blood purification process to patients who lack kidney function. Because it requires continuous treatment until death or until kidney transplantation, the patients' life quality of (QOL) damages severely. Therefore, nursing care in Hemodialysis is a special care that requires high professional training, and the patience to stay in constant monitoring of the patient throughout the dialysis process. Purpose-The main objective is to identify the standard of nursing care of patients who are subject of PHD process for more than 6 months. Material and methods. This research paper is a prospective study, carried out in the Hemodialysis ward, at the General Hospital of Peja on September, 2021.

In this study researches have been included 51 patients, where the most included age was from 61-70 years. Of the total number of patients, 57% were female, while 43% were male.

On this occasion, 65% of them live in rural areas, while 35% in urban areas. For the realization of this research work, have been used administered questionnaire, divided into several items. Results -From the patients' cards the results have showed that patients have poor quality of health since in addition to regular getting of HD they also face other accompanying diseases, which significantly reduce the quality of their health. From this study results that patients were not constantly monitored by nurses and that doctors were often absent from the dialysis session. The preferred access it was AVF, while, patients were faced with the multiple placements of CVC due to the short longevity of AVF. Recommendation-The management of Hemodialysis should be aware for the comfort of these patients. For further, they should be aware for strengthening of educational programs to advising of physicians in expanding the plan for patients' care and of the nurses in order to constantly staying and monitoring of the dialysis session from start to finish, and education on vascular access care is necessary as these links are closely tight with the quality of patients' life. Continuous and successful monitoring of these patients is possible only when are involved different categories of medical staff.



# **The effects of sex therapy in the treatment of women with vaginismus and their partners**

Hajrullah Fejza1, Ejona Icka 1, Albina Fejza1  
College UBT – Faculty of Medical Science

**Abstract** Vaginismus means not allowing the insertion of the penis, finger, vibrator or other objects into the vagina and in most cases, it is caused by psychological factors. Sex therapy applied in several sessions by the expert is the best way to overcome this situation. Purpose: To present the effects of sex therapy in cases diagnosed and treated with vaginismus. Methodology: The cases of treatment of women and their partners with this type of therapy in the Specialized Ordinance of Sexology "Libido" in Pristina, in the period 2020-2022, were analyzed. In total, 42 such cases were handled in this time period. The data were taken from the treatment protocol. Results: In this research, the effects of sex therapy in these cases were analyzed and it was found that in 37% of cases the treatment effect was achieved with 1-3 sessions, in 43% of cases 3-5 sessions were needed, while more than 5 sessions were applied in 20% of cases. In 26 cases, the application of only sex therapy, mainly the sensate focus therapy, was sufficient, while in 16 other cases, the application of CBT therapy was also necessary. In all cases, the partner was also involved. Conclusion: Vaginismus as a quite frequent phenomenon should be treated scientifically with sex therapy, which means focusing and treating by reducing the feeling of fear for the woman and instructing the partner in the way of approach and constant support for the woman.

**Key words:** vaginismus, sex therapy, sensate focus.

## **The rate of development of a primary malignant tumor based on the TNM classification.**

**Depending on the clearly defined criteria, there are several levels of stages and sub-stages.**

**Such a classification also applies when it comes to Breast Carcinoma. Case study**

Skender Dreshaj

**Abstract** Stage IB of breast cancer with TNM classification as T0N1miM0 cases when it is not found with malignant changes of a primary tumor in the breast, but there is microstasis in a lymph node (usually in the armpit) and stage II A, when cells may not be found. malignant in the tissue of the gland but there are 1-3 lymph nodes attacked with diameter over 2 mm. These cases are not common. The standard of the paper is to produce a discussion on the questions resulting from the case study and previously the findings from the results of the pathohistological analysis after bilateral total mastectomy with axillary lymphadenectomy and the course of the disease as evidenced by the documentation-history of the disease, with a special focus. according to the true nature of the palpated node in the right breast which, in the ultrasound examination, sometimes has a suspicious characteristic of malignancy. (9.7mm, 10/9/7 mm to disappear after 2 years with persistent suspicious lymph nodes). The case study has two peculiarities: In the histopathological examination of the breast gland after mastectomy, no cells with malignant changes are found, not even a single non-proliferative dysplastic change, metastatic malignant changes in only 1 lymph node 2 mm out of a total of 18 excised (IIA classification) Luminal B ( Er +, Her2 , Ke 67 -35% ) , cases that are not common. The peculiarity of the case, of the objects of the study, is the fact that at the beginning we had a self-palpated node by the patient and the suspects in the ultrasonography examination in the right breast, behind the areola, which has a suspicious lymph node in the right armpit. After two observation comments, the nodule in the breast recedes-disappears, while the lymph gland subjected to the first biopsy is a node with metastatic carcinoma originating in the breast gland, as well as after bilateral total subcutaneous mastectomy changes with resection of the axilla, the tissue found correctly. non-proliferative dysplastic and left proliferative dysplastic changes. Out of 18 lymph nodes dissected in the axilla, only one lymph node with malignant metastatic changes with high probability from the breast gland (immunohistochemical analysis). The question that comes to my mind and became the driving force of the real study was whether the disappearance of the nodule in the gland could be the result and competent immunological responses of the older patient of the primary malignant process in the breast?! Of course, based on the follow-up procedures during the diagnosis of the patients, the examinations at the beginning when the node was present, based only on the ultrasonographic examination, the malignant nature of the change can be documented. Further results prove, unequivocally, the malignant nature of the lymph gland originating from the breast, since in the PH examination of the two breast glands (after mastectomy) the primary source is not found, in my opinion, it makes the question whether we have it legitimate from a theoretical point of view. do with can understand competent immune, so a functional immune system! Determination of the level of Tumor Infiltrating Lymphocytes (TIL) if it was not important in value, taking into account the classification of the Luminal B subtype (WHO recommendation)?! Through the chronological description of the history of the disease and the commentary on the analyses, diagnostic procedures, therapeutics and results, which is the methodology of punishment, I hope to justify the questions posed and thus this paper.

# Biochemical, hematological and coagulation analyzes in patients with covid 19 disease

Zafer Gashi<sup>1</sup>, Afrim Zeqiraj<sup>1</sup> Shkelzen Elezaj<sup>2</sup>Fitore Gashi<sup>3</sup>

<sup>1</sup>UBT College Pristina, Kosovo. <sup>2</sup> Regional Hospital, Peje, Kosovo. QKMF, Mother Teresa, Klinë, Kosovo

**Abstract** Pathological analyzes of routine hematological, coagulation and biochemical tests enable the identification of patients with a poor prognosis and the early detection of complications of the COVID-19 disease. Analyzes must be interpreted in the context of the overall clinical picture of an individual patient, and monitoring changes at the level of individual parameters is also extremely important. Materials and methods: A categorized and comprehensive literature search was conducted from 20 May 2021 to 25 July 2022 using international databases including PubMed, Embase, Web of Science, Scopus and the Cochrane Library in accordance with guideline recommendations to PRISMA. The PICO strategy was used to formulate the research question. The following terms were used: biochemical parameters in COVID-19, hematological parameters in COVID-19, blood coagulation parameters in COVID-19, indicators of inflammation, indicators of tissue damage in SARS-CoV-2. Conclusion: Due to insufficient specificity, routine hematological, coagulation and biochemical tests are not used for the established diagnosis of the disease COVID-19, but are mainly used to assess the severity of the disease and to monitor the course of the disease and the effect of treatment.

**Key words:** COVID-19, SARS CoV2, Lymphopenia, Neutrophilia, CRP, D-dimer, Ferritin.

# Variation of serum PSA levels in male COVID-19 infected patients with benign prostatic hyperplasia (BPH)

Zafer Gashi<sup>1</sup>, Afrim Zeqiraj<sup>1</sup>, Shkelzen Elezaj<sup>2</sup>, Fitore Gashi<sup>3</sup>

<sup>1</sup>UBT College Pristina, Kosovo. <sup>2</sup>Regional Hospital, Peje, Kosovo. QKMF, Mother Teresa, Klinë, Kosovo

**Abstract** Objective: To investigate the effect of SARS CoV-2 on serum total PSA levels in men with BPH diagnosed with COVID-19. Methods: PSA levels were measured with Cobas E 411, in patients who had a PSA control at least 3 months, but not more than 6 months, before the diagnosis of acute infection COVID-19, were examined retrospectively. PSA levels were measured and recorded from these patients on the first day of diagnosis of COVID-19. These patients were called back for outpatient urology follow-up at the third month after completion of treatment for COVID-19. PSA levels measured in the period before COVID-19, during the period of active infection with COVID-19 and in the period after COVID-19 were compared. Results: In total, 31 patients had a serum PSA level of 1.58 ±1.09 ng/ml in the pre-COVID-19 period, a serum PSA level of 4.34 ± 3.78 ng/ml mL measured in the period of COVID-19 and 2.09 ±2.70 ng. /mL in the post-COVID-19 period. It was determined that the serum PSA level measured during active COVID-19 infection was statistically significantly higher than the PSA levels measured according to the period before COVID-19 and the period after COVID-19 (P < .001, P < .001 respectively). Conclusion: SARS-CoV-2 infection in men diagnosed with BPH causes significant increases in PSA levels during the active period of the disease.

Key words: PSA, COVID-19, BPH, prostate.

# The importance of early reporting - in cases of sexual violence

Arsim Gerxhaliu<sup>1</sup>, Bergita Curri<sup>2</sup>, Arita Gerxhaliu-Rama<sup>3</sup>

<sup>1</sup>UBT – Higher Education Institution , Medical Sciences

<sup>2</sup>IML – Institute of Forensic Medicine – Ministry of Justice

**Abstract** Violence / sexual abuse is usually unwanted sexual behavior by one person towards another. The same in most cases is carried out by using force, or as a result of any other benefit, such as material, threatening, it creates fear, etc. \*The term - Sexual violence - includes all forms of violation of sexual integrity (starting from attention, touch, up to sexual intercourse without consent. The offender is called a sexual abuser or (often pejoratively) a molester. The term also covers any behavior by an adult or older adolescent towards a child to stimulate either of those involved sexually. Using a child, or other individuals younger than the age of consent, for sexual stimulation is called child sexual abuse or statutory rape. The victims are usually; children, spouses, people with limited development, people with dementia, the elderly, etc. Reason: Based on the data of the medical-legal examinations - the clinical aspect of the examinations at the Institute of Forensic Medicine in Prishtina, an analysis of the examined cases was made, the ages were calculated in statistical terms as well as the reported on time / or late in cases of sexual violence. A worrying percentage of cases - were presented late, (several days, weeks and months) where we tried to find the cause of the late notification - fear, lack of adequate education of the population as well as institutional officials who deal with this issue, lack of education educational etc. Based on the findings that we will present in this paper, we were forced to v. 2019, let's start with the education campaign from primary schools, secondary schools, up to the relevant institutions, to show you the password of presentation on time, because biological evidence (semen, saliva, hair, etc.), as well as physical damage (contusions, hematomas, bruises, compressive tearing wounds) can disappear with the passage of time and late appearance. As a result of not reporting on time - only in 28% of cases were samples taken for biological tests. The term - *Sexual violence* - includes all forms of violation of sexual integrity (starting from attention, touch, up to sexual intercourse without consent).

# Herlyn-Werner-Wunderlich syndrome: a case report

Ilir Ahmetgjakaj, Arben Kutllovci & Edita Bajraktari

UBT - University for Business and Technology (UBT), Pristina, Kosovo

**Abstract** Herlyn-Werner-Wunderlich Syndrome is a congenital anomaly of müllerian ducts, characterized by uterus didelphys, obstructed hemivagina, and ipsilateral renal agenesis which can lead to progressive dysmenorrhea in post menarche, hematocolpos or hematometra. The underlying cause behind this syndrome is not properly understood yet but it's associated with impaired development of mesonephric and paramesonephric ducts also known as Wolffian and Müllerian ducts respectively. It has been observed that anomalous development of the caudal end of unilateral Wolffian duct is associated with same sided imperforated hemivagina and absence of kidney. Also lateral deviation of the Müllerian duct of the same side results in failure of fusion of the bilateral Müllerian ducts which leads to uterus didelphys. Moreover, deviated paramesonephric duct cannot interact with the urogenital sinus properly, so instead of giving rise to a vagina, a blind pouch is developed forming obstructed hemivagina. It is also called as OHVIRA which is an acronym that refers for obstructed hemivagina and ipsilateral renal anomaly. The true incidence ranges from 0.1-3%. In this report we describe the clinical presentation and successful surgical management of a 17-year-old girl who presented with abdominal pain and painful menstruation. Further evaluation with pelvic ultrasound revealed 3 cystic formation. The diagnosis of Herlyn-Werner-Wunderlich Syndrome is confirmed by Pelvic MRI which showed hematocolpos, endometrioma, hematosalpinx and agenesis of right kidney in upper abdomen. Surgical management was done by iatrogenic defloration, vaginal septum incision, and Stressman metroplasty. The perioperative and postoperative periods went uneventful, and the patient recovered without any significant complication. The cytological sample revealed absence of any malignant cells. The patient left the hospital with detailed instructions related to post-discharge care. The patient became asymptomatic with preservation of fertility. Presentation of regular menstruation and non-specific abdominal pain causes misdiagnosis, so awareness is necessary to treat this disorder to prevent complications such as endometriosis and infertility.

# The Role of Imaging in Neuroradiology Emergencies

Edita Bajraktari, Ilir Ahmetgjekaj & Fitim Alidema

UBT - University for Business and Technology (UBT), Pristina, Kosovo

**Abstract** The neuroradiological emergency is diverse and divided into two main groups: a) Traumatic b) Non-traumatic. In cranial trauma MSCT is ideal in trauma patients because we are able to detect both the fractures and the traumatic brain injuries, we are primarily interested in. CT is fast, reliable and now widely used as the primary examination in all trauma patients. Being a quick examination, it is also used well in patients in serious and comatose conditions. Routinely, we used 5 mm incision for the posterior fossa and then 10 mm starting from the suprasellar region. In order to perform these reconstructions well, we used thin slices in spiral CT (MSCT), usually from 1-3 mm, 3D images enable spatial visualization of the placement of bone fragments and fracture edges. Magnetic resonance can be used in the subacute phase when the CT data does not justify the patient's condition, so the CT has left something undetected. This is usually observed in small damage to the structures of the posterior fossa (medulla oblongata, cerebellum, pons) or in petechial hemorrhages. The spine plays an important role. It should be noted that the patient's condition often does not allow obtaining clear images due to involuntary movements and the relatively long examination time. The usual MRI protocol in cranial trauma includes the following sequences: axial and sagittal T1 as well as axial T2, but when it is required to evaluate a subarachnoid hemorrhage, FLAIR is also used. Plain radiography appears to have no role in these patients. It is used as an orientation method for spine trauma.

**Key words:** CT, MRI, neuroradiology emergencies, Pristina.

# The importance of applying alternative medicine in postmodern times

Diana Sejdiu Shala & Arlinda Bricori  
UBT College – Higher Education Institution

**Abstract** Despite the development of technology in recent years in the field of medicine, the importance of the application of alternative medicine has not decreased. Our goal is to identify the reasons for using alternative medicine and the degree of reliability of its use in the prevention, diagnosis, and treatment of diseases. The research was accomplished with 107 participants, of which 92 were female, and 15 were male. Participants are aged 18 – 49 years. For measuring the participants' attitudes about the application of alternative medicine, the Complementary Alternative Medicine Questionnaire (Arthur, 2009) was used, which was translated and adapted for the nursing field. The questionnaire was completed online through Google Forms. The results show that the reason for using alternative medicine is not only after the failure of treatment through conventional medicine but also for the prevention (24.5%) and treatment (23.6%) of diseases. The participants think alternative medicine is necessary, and 84.9% think its use in Kosovo should increase. The research revealed the reasons for practicing alternative medicine, which offers different products and natural therapies. The results of these methods have increased the credibility of alternative medicine to improve the physical and mental health of the individual. Furthermore, to prevent and cure many diseases.

**Key words:** alternative medicine, conventional medicine, reliability, natural therapy, prevention, application.



# **Clinical presentation of new onset of Diabetes Mellitus in children and adolescents during the period of Covid-19 pandemic**

Vjosa Mulliqi Kotori, Elida Krasniqi, Afrim Kotori

**Abstract** Diabetes Mellitus type 1 is one of the most common endocrinological disease in children. As in many countries of the world, also in Kosovo, the number of children and teenagers affected by diabetes is increasing. The aim of the presentation was to evaluate the number of new cases of diabetes in children and adolescents and the rate of Diabetic Ketoacidosis at the time of diagnosis at the Referral Center for Diabetes, Pediatric Clinic in Prishtina during the period of Covid 19 pandemic compared to previous years. Methodology: The research was retrospective in nature, the data from the hospital records of 220 patients were evaluated. The data of the first group of patients were collected from the period before Covid pandemic (from January 2015 to February 2020) and the second group were the patients presented during the period of Covid pandemic ( from March 2020 until April 2021). Results: The frequency of new cases of diabetes during the period of Covid 19 has not shown a significant increase, but their clinical presentation in a state of severe diabetic ketoacidosis has been 30% higher compared with the period before Covid pandemic and with a fatal outcome in two teenage children. Conclusions: The risk of severe diabetic ketoacidosis in new cases of diabetes has been more pronounced during the period of Covid 19 pandemic. It must be necessary to reorganize the health system in particular during such situations to prevent the deterioration of the condition of children and adolescents with diabetes.

# Journey of nurses during pandemic covid 19 in Prishtina

Njomza Shosholli Peja<sup>1</sup> & Argjiro Alija<sup>2</sup>

UBT College - Higher Education Institute, Nursing Faculty

**Abstract** Introduction: This paper explores the journey of nurses during the COVID-19 pandemic in providing services to infected patients, their role, their health, that of their family members as well as institutional and moral social support. Nurses have continued to provide care to patients despite fatigue, personal risk of infection, fear of transmission to family members, death and loss of many patients. Sadly, nurses have also faced many of the problems that are often avoided - stress and anxiety, as well as long-term care combined with fear of suffering and the inclusion of personal isolation for several days after suspicious contact. The nurses have faced Burnout syndrome defined as complete emotional, physical and mental fatigue. Papper: Presentation of nurses journey during the Covid-19 pandemic. A journey full of challenges including mental, physical and emotional state, distance from family, assessment of coping with "burn out" syndrome and looking at potential sacrifices in case of deterioration of the pandemic. Methodology: The study is of qualitative type. We used the questionnaire as a method for conducting the research. The sample of respondents was 250 nurses, head nurses employed in the Prishtina region at different levels of health institutions. Results: The analysis of the data extracted from this research on the experiences and the nurses' journey during the Covid-19 pandemic resulted in great challenges which are still growing. The results confirmed the need for additional security of nurses during the provision of health care as well as for psycho-physical and social support. Conclusions: Social distance continues to be the key motto throughout the pandemic, but people in general and nurses in particular are surrounded by generosity and pure love from both their families and society.

**Key words:** Covid 19, nurses, journey, safety, burnout, psycho-social support.

# Features of the use of antipsychotics in IPFK in 2021

Gani Halilaj<sup>1</sup>, Naim Fanaj<sup>3</sup>, Fahri Drevinja<sup>2</sup>, & Ajet Bunjaku<sup>2</sup>

<sup>1</sup>UBT-Higher Education Institution, Lagjja Calabria, p.n. 10000 Pristina, Kosovo

<sup>2</sup>Institute of Forensic Psychiatry, Pristina, Kosovo

<sup>3</sup>College of Medical Sciences "Resonanca" Prishtina,

**Abstract** The use of antipsychotics in the treatment of the mentally ill represents a complex modality, especially in specialized institutions such as the Institute of Forensic Psychiatry of Kosovo. Current best practices are summarized in clinical guidelines, which nevertheless recognize the importance of individualizing treatment. Purpose To understand the features of the use of antipsychotics in IPFK as a prerequisite for increasing the quality and adequate treatment in psychiatric institutions in Kosovo. Methods It is a retrospective study. The files of 64 patients admitted to IPFK for evaluation and of 37 patients admitted for treatment in 2021 were analyzed. The types of antipsychotics, their doses, their combinations, accompanying side effects, etc. were analyzed. Results Only three cases admitted for treatment and 40 patients admitted for evaluation were not using antipsychotic drugs. 39 patients used one antipsychotic, 17 patients used 2 antipsychotics at the same time. 15 patients used 3 psychotropic drugs, while 9 patients used four psychotropic drugs. no side effects were noted. No cases of therapy refusal have been recorded. The doses of the drugs used are within the recommended therapeutic limits. Most of the antipsychotics used were of the second generation. Conclusions Antipsychotic medication is the main method of treatment in IPFK, based on the specifics of the cases. The impression of overuse of several antipsychotics at the same time requires deeper professional consideration in order to avoid chemical restraint as a management method.

**Key words:** antipsychotics, IPFK, use, online, Kosovo.

# The role of nursing in the treatment of patients with amblyopia in Republic of Kosovo

Albana Hashani Berisha<sup>1,2</sup> & Njomza Shosholli Peja<sup>1</sup> & Blerina Isufi Zejnullahu<sup>2</sup>

<sup>1</sup>UBT-Higher Education Institution

<sup>2</sup>University Clinical Center of Kosovo

**Abstract** Amblyopia (lazy eye) is characterized with inactivity, lack of vision in one eye. In ophthalmology amblyopia is considered one of the main causes of the unilateral reduction. Worldwide amblyopia affects approximately 2% of the population. Amblyopia is mainly a disease of childhood because such an important aspect is the problem of early detection and correction. A development of hysterical amblyopia caused by negative factors psychogenic, accompanied by hysteria, psychosis, this may develop as damage unilateral and bilateral visual, concentric narrowing of visual fields, failure to distinguish color, photophobia and other functional disorders. Exposed to the risk for developing amblyopia are the children born in the birth prematurely (especially with deep degree of prematurity). With complicated perinatal history, the degree of Scale development of mental retardation who have a family history of amblyopia or strabismus. Amblyopia is escorted with a number of inherited diseases such as Kaufman syndrome, steal syndrome, ophthalmoplegia with ptosis and myosom. The method of this work focuses on the role of compiling the plan of nursing care in the prevention and treatment as early and successful in patients with non-development of vision. During the research they are included patients who were treated in the clinic of eye-cabinet of strabology, ortho-pleotics in the time period 2017-2022 during which were analyzed over 84 patients- children. The purpose of this paper is the role of nurse about care and treatment to patients with amblyopia, the education of wide mass for preventive measures and treatment regularly and will be included care plan nursing diagnosis nursing, evaluation of the patient by nurse, specific actions to nursing order to carry out the plan of nursing care and to help the patient achieve a stable improve health condition. The obtained results show that the most frequent percentage cases of not development of vision that we have encountered were patients who live in the cities.

**Key words:** Amblyopia, children, nursing, clinic.

# Assessment of mothers' knowledge about breastfeeding and the importance in the health of newborns

Drenushë Zuka<sup>1</sup> & Ariana Zenuni Cebeci<sup>2</sup>

<sup>1</sup>UBT-Higher Education Institution, Faculty of Nursing

<sup>2</sup>University Clinical Center of Kosovo, Prishtina, Kosovo

**Abstract** Promoting breastfeeding is a key strategy for a healthy growth of babies. The aim of this study is to raise moms' awareness that breastfeeding is the most advanced and irreplaceable method to feed their babies. Breastfeeding has been proven it is extremely important because it helps achieve the findings that in first year babies have weak health. Human milk, or breast-milk, is uniquely engineered for human infants, and is the biologically 'natural' way to feed infants. Despite this, infant formula has been actively promoted as a product equivalent to breast-milk. Reason: The statistical data are research data made by the National Institute of Public Health of Kosovo (IKSHP). "Knowledge, Attitudes, Practices of primary health care workers and mothers for feeding babies and young children". This research was conducted in primary health care (PHC), in Kosovo. An interview based on a questionnaire, attitudes and practices on infant and child feeding was used for the research. The method of sample selection was mothers of childbearing age. Out of 500 mothers interviewed, the most represented age group of births was the age group with 267 cases (53.4 %), followed by the 30-39 age group with 202 cases or (40.4 %). According to the number of children, there were mostly mothers with 1 child in total 191 or (38.2 %), with two children 163 or (32.6 %) of the cases, with three children 104 or (20.8 %) and with more than three children there were 42 or (8.4 %). The interviews were conducted in the first week of June 2013. Results show well prenatal education of women about breastfeeding.

**Key words:** Breastfeeding, motherhood, newborns.

# **Diabetes Mellitus - Challenge for Primary Health Care nurses in the municipality of Kaçanik**

Shqipe Agushi PgD, Nafije Pajaziti MSc, Fatbardha Hasaj BSc,  
Ubt Higher Education Institution, Lagjja Kalabria, 10000 Prishtinë, Kosovo.

**Abstract** The purpose of this paper is research on the Challenge of Primary Health Care nurses in the municipality of Kaçanik. Since the study is taking part in a certain region, the number of respondents included in this questionnaire are all Nurses who work in the MFMC in the Municipality of Kaçanik and since number of Nurses is small, the generalization of the data is not intended but it can advance to do research in other primary care centers in Kosovo. No generalizations are intended. The nurses will answer the questions that have been prepared in the questionnaire which is adapted from WHO. The interviews will take place at the workplaces of the participants and will last between 10-15 minutes. According to the results, it can be seen that there is a discrepancy between the knowledge and expertise of the participants described as important for providing high quality care for people with diabetes. Nurses, as facilitators of care practice who can promote sustainable change in care, need more skills to provide more specialized care related to both types of Diabetes Mellitus in practice, team management through time and systematic help. In this way, it will be possible to strengthen the pillars of primary care, and thus, develop preventive and proactive population-based care and favor patient centralization and support for self-management.

**Key words:** Diabetes mellitus, primary health care, Insulin, Immune System.

# Epidemiology of chronic pain in Kosovo and its impact on public health

Fadil Kryeziu<sup>1,3</sup>, Sejran Abdushi<sup>1,2</sup>, Adem Bytyqi<sup>1,2</sup>, Violeta Kryeziu<sup>3</sup> & Agron Bytyqi<sup>2</sup>

<sup>1</sup>UBT-Higher Education Institution

<sup>2</sup>Regional Hospital “Prim. Dr. Daut Mustafa” Prizren

<sup>3</sup>Regional Institution of Public Health Prizren

**Abstract** Chronic pain is a common, complex, and distressing problem that significantly impacts public health. Worldwide, the burden caused by chronic pain is escalating: 1.9 billion people were affected by recurrent tension-type headaches, the most common symptomatic chronic condition. In the literature review was found that chronic pain affects 10-55% of the adult population. This paper aimed to learn more about chronic pain and its impact on public health. Methodology The research was of retrospective type. There was a literature review of the epidemiological data on chronic pain, separating cancer pain and non-cancer pain where possible. The medical protocols in the Main Center of Family Medicine in Prizren and in the General Hospital of Prizren were analyzed, specifically in the internal ward, rheumatology service, neurology ward, orthopedic ward, and emergency service. Data are obtained for the period January-December 2021. Results As long as we do not have a register at the national level, we can not conclude what is the incidence of cases of chronic pain in Kosovo. However, according to the results obtained from the protocols of MFMC and the Hospital in Prizren, chronic pain has been the most common symptom of patient visits. Based on the data from the analysis, it was noticed that the female gender (62%) was more affected by chronic pain, while no case was under 18 years old. Of the identified chronic pains, headache has dominated, then back pain, neck pain, and muscle pain in general. There was no protocol for the treatment of chronic pain in either the MFMC or the Prizren Hospital. Conclusion The risk factors related to chronic pain need to be addressed by managing the causes and effects of chronic pain. As there is no chronic pain registry and chronic pain treatment protocol nationwide, it is important to establish them to improve the well-being of the population.

**Key words:** chronic pain, epidemiology, pain management.

# Incidence of presenting hepatitis A in the Peja Regional Hospital during 2019-2020

## Review Article

Afrim Zeqiraj<sup>1</sup>, Zafer Gashi<sup>1</sup>, Shkelzen Elezaj<sup>2</sup>, Dafina Zeqiraj<sup>2</sup>, Melisa Zogaj<sup>1</sup>, Florjana Zogaj<sup>3</sup>, Zenel Shatri<sup>2</sup>, Agim Shabani<sup>4</sup>

<sup>1</sup>UBT - Higher Education Institution-Prishtina, Kosovo

<sup>2</sup>Regional Hospital of Peja, Republic of Kosovo

<sup>3</sup>Department of Biotechnology, University of Prishtina, Prishtina, Kosovo

<sup>4</sup>Department of Chemistry, University of Tetovo, Republic of North Macedonia

Corresponding author: Melisa Zogaj, Department of Nursing, UBT - Higher Education Institution- Prishtina, Kosovo.

**Abstract** Hepatitis is a very common inflammation of the cells of the liver. Hepatitis can be temporary (acute) or long-term (chronic) depending on whether it lasts less than or more than six months. The hepatitis A virus infects humans and some primates and is the cause of infectious hepatitis. Purpose and objectives: Viral hepatitis infections are also present in our country, so the purpose of working on this topic is to expand knowledge in terms of Viral Hepatitis A, Their Epidemiology, and Preventive Measures. Materials and Methods: In the realization of this paper, the method of the literature review was used, in addition, information was presented on the number of patients with viral hepatitis A in the regional hospital of Peja, the Republic of Kosovo for the period 2019/2020. Results: From the results obtained it is clear that the number of patients with Hepatitis A was low and thankfully in non-significant values. However, the fact that the number of Hepatitis B patients is increasing, and especially the increase in the number of Hepatitis C cases, remains a matter of concern, and it is worth noting that care should be taken to prevent the spread of these viruses at a very high rate. Conclusion: Given the risk posed by these infections, the prevention of viral hepatitis requires an organized and ongoing program of education and treatment. Recommended measures for the prevention of viral hepatitis are: Ensuring adequate sanitary and personal hygiene. Drink only water that is controlled, Avoid drinking alcohol, Avoiding any non-particularly recommended medication acetaminophen (Tylenol) and sedatives for 3-12 months because such medications are hepatotoxic, Frequent breaks during the day and a good night's sleep. Eating small, frequent, high-carbohydrate, low-fat meals. Following the guideline for preventing the transmission of the disease to patients and other persons who are not infected, Timely immunization reports all cases of hepatitis to the health department.

**Key words:** hepatitis A, B, C, HBV.



# Helicobacter pylori and its treatment

Zaim Gashi

i, UBT, UCCK, Prishtina, Rep. of Kosova

**Abstract** *H. pylori* infection is a common worldwide infection that is an important cause of gastritis, peptic ulcer disease, MALT lymphoma and gastric cancer. *H. pylori* may also have a role in uninvestigated and functional dyspepsia, ulcer risk in patients taking low-dose aspirin or starting therapy with a non-steroidal anti-inflammatory medication, unexplained iron deficiency anemia, and idiopathic thrombocytopenic purpura. **Methods.** While choosing a treatment regimen for *H. pylori*, patients should be asked about previous antibiotic exposure and this information should be incorporated into the decision-making process. For first-line treatment, clarithromycin triple therapy should be confined to patients with no previous history of macrolide exposure who reside in areas where clarithromycin resistance amongst *H. pylori* isolates is known to be low. **Results.** Most patients will be better served by first-line treatment with bismuth quadruple therapy or concomitant therapy consisting of a PPI, clarithromycin, amoxicillin, and metronidazole. When first-line therapy fails, a salvage regimen should avoid antibiotics that were previously used. **Conclusions.** If a patient received a first-line treatment containing clarithromycin, bismuth quadruple therapy or levofloxacin salvage regimens are the preferred treatment options. If a patient received first-line bismuth quadruple therapy, clarithromycin or levofloxacin-containing salvage regimens are the preferred treatment options. Details regarding the drugs, doses and durations of the recommended and suggested first-line and salvage regimens can be found in the current guideline.

**Key words:** helicobacter pylori, infection, treatment.

# Nursing care of chemotherapy patients

Drita Berisha

**Abstract** Cancer is the uncontrolled growth of cells and their spread beyond their limits, which can invade other parts of the body and spread to other organs. Pain is the most predominant symptom (30%), which leads to Patients who have been diagnosed with cancer should seek help and professional health care. Chemotherapy is treatment with drugs that can destroy cancer cells. The goal of study: Let's explain what cancer and chemotherapy are, to understand the knowledge of nurses about chemotherapy, the awareness of nurses about the care of patients with chemotherapy and the management of side effects. To achieve the goals of the study, we used the following research questions: what do nurses know about chemotherapy, what do nurses know about their role in the care of chemotherapy patients and what are nurses' knowledge about side effects such as complications of chemotherapy

**Methods:** In this study, the quantitative approach was used. Hematology clinics, Oncology clinics and Pediatrics clinics - Hematology department were selected for the study. The study was conducted in the period September-October. The data for the study were collected by means of a structured questionnaire, with 60 closed questions and one open. 48 nurses working in these clinics participated in the research. The data were analyze using the statistics program (excel program). The results were presented in tables and diagrams. Frequency and percentage were used to describe the results.

**Results:** In general, the results obtained for the knowledge of nurses regarding chemotherapy and its application are satisfactory. We have poor results regarding the knowledge of nurses/participants regarding the effects of chemopreparations, which almost all cause alopecia, where only 56 % give correct answers. As for the routes of administration of chemotherapy, the results are very satisfactory where 98% answered correctly. For the management of complications, the results of the research show that there is a need to raise the knowledge of the participants because 48% of the participants in the study agree that only doctors are responsible for conflict management.

# Hiatal hernia associated chronic cough: two case reports

Telaku Skender<sup>1</sup>, Islamaj Edmond<sup>2</sup>, Telaku Mimoza<sup>3</sup>

<sup>1</sup>UBT, Pristina, Kosovo, <sup>2</sup>CUCK Gastroenterology Department, Pristina Kosova; <sup>3</sup>Medical Faculty Tirana, Albania,

**Abstract** Chronic cough conventionally defined as a cough persisting for more than 8 weeks, represents both a disabling symptom for the patients and a difficult management problem. Gastroesophageal reflux alone or in combination with other factors such as postnasal drip syndrome and/or asthma is the cause of chronic cough in 10-40 % of adult patients. Reflux related extraesophageal manifestations are frequent and represent a diagnostic and therapeutic challenge which could involve lungs, upper airways and mouth, presenting with asthma, laryngitis, chronic cough, dental erosions, and non-cardiac chest pain. One common cause of acid reflux disease is a stomach abnormality called a hiatal hernia. Here we present two patients with chronic cough, who had hiatal hernia. The first case is an 81-year-old male, with a cough for the last three years. The patient had been visiting pulmonologists for a long time because of their cough. Finally, he was instructed to consult a gastroenterologist. In the upper endoscopy, in addition to antral gastritis suspicious for an intestinal metaplasia, there was also a 3-4 cm hiatal hernia. Whereas the second case is a 54-year-old lady with chronic cough. She also has been visited many times by doctors. Endoscopy revealed hiatal hernia of 4-5 cm. Despite the prescribed therapies and diet the cough persisted, therefore laparoscopic fundoplication was proposed. At the end of this report, it should be said that in the differential diagnosis of a chronic cough, gastroesophageal reflux disease should also be considered.

**Key words:** Chronic cough; Hiatal hernia; Gastroesophageal reflux

# Incidence of oral diseases with microorganisms causing sexually transmitted diseases

Zafer Gashi<sup>1</sup>, Afrim Zeqiraj<sup>1</sup> Shkelzen<sup>2</sup>

<sup>1</sup>UBT College Prishtina, Kosovo. <sup>2</sup>Regional Hospital, Peja Kosovo

**Abstract** During oral-genital intercourse, especially if the contact is prolonged, oral and genital secretions can be transferred from one person to another. In this way, microorganisms that require very specific favorable conditions for reproduction and that would otherwise not be able to survive in less direct modes of transmission (eg T. pallidum, herpes simplex virus) can be successfully transmitted. After the discovery of the HIV virus, there is a great interest in the non-sexual mode of transmission of such infections. The main categories of sexually transmitted diseases of importance to the oral cavity are bacterial (including chlamydial), viral and fungal diseases. Considering the frequent manifestations in the oral cavity, interest in diseases such as syphilis, gonorrhea, herpes, hepatitis B and C and HIV. Objective: Using the literature published in this field, the authors prepare this paper to describe the etiology, the clinical overview of diseases caused by the transmission of infection during intimate contact between the oral cavity and genital organs. Methods: A comprehensive literature search using international literature from databases including PubMed, Embase, Web of Science, Scopus and the Cochrane Library. Conclusion: Oral manifestations of sexually transmitted diseases are rare or rarely encountered in specialized practice in a small country such as the Republic of Kosovo. Dentists are the first to see and diagnose venereal diseases of the mouth. Such a role would mean a change in the traditional activity model of the dentist, for which perhaps neither the dentist nor his patient is ready today, either for cultural reasons or because of the traditional perception of the dental profession. Recommendation: For the prevention of sexually transmitted diseases that enter the oral cavity, it is recommended that oral medicine specialists work as part of a multidisciplinary team, together with an infectious disease specialist, dermatovenerologist, urologist, gynecologist and microbiologist, to establish the diagnosis of correctly and treating the patient.

**Key words:** STD, gonorrhea, syphilis, chlamydia, HIV, hepatitis B, hepatitis C.

# **Intramedullary mature cystic teratoma of conus medullaris, a case report and a review of literature of a rare pathology**

Besnik Elshani, Valon Abdullahu , And Elshani

\*Clinic of Neurosurgery, University Clinical Center of Kosovo

**Abstract** Teratomas are a type of multipotential cell tumor that contain a mixture of multiple germinal layers formed by normal organogenesis and reproductive tissues. The incidence of spinal teratoma is rare, only 0.15–0.18% of spinal tumors have been classified as teratomas. Intramedullary teratomas are even less common. They usually present with spinal dysraphism, of after spinal trauma or lumbar puncture, neither of which were the case in our patient. We present a case of a 47 year old male who presented with inferior paraplegia, incomplete cauda equina syndrome, right leg paresthesia and left leg pain. On MRI imaging in the L1 level, in the spinal canal, a massive intradural intramedullary lesion is seen, which fills the entire spinal canal which after administration of IV contrast showed only a slight peripheral enhancement. A L1 and partially L2 laminectomy and midline durotomy was performed with a midline myelotomy at the conus medullaris level, and a creamy, dense, yellow, mucoid substance was discharged. A hard tumoral mass of yellow color was then encountered, without clear borders from the normal cord, which was removed in subtotal manner. Histopathological examination revealed a mature cystic teratoma. These are very rare cases and a brief review of the literature was conducted in our study.

# The impact of rate control versus rhythm control on the quality of life of patients with atrial fibrillation

Sejran Abdushi<sup>1</sup>, Shpend Abdushi<sup>2\*</sup>, Fadil U. Kryeziu<sup>1</sup>, Gresa Begaj<sup>1</sup>.

<sup>1</sup>University for Business and Technology – UBT, Prishtina, Republic of Kosovo.

<sup>2</sup>Polyclinic for Internal Medicine and Cardiology “SHËNDETI”, Prizren, Republic of Kosovo.

\* Corresponding author: Dr. Shpend Abdushi – [shpendabdushi@gmail.com](mailto:shpendabdushi@gmail.com)

**Abstract** Atrial fibrillation is among the most frequent arrhythmias and is manifested by symptoms such as fatigue, dyspnea, and palpitations. Moreover, most patients consider it as a life-threatening arrhythmia, and as a result of all this, the quality of life of the patients is greatly damaged. The aim – of this research was to determine the impact that atrial fibrillation has on the quality of life of patients. Also, the impact of the treatment strategy (rate control versus rhythm control) of atrial fibrillation on the patient's quality of life. **Methods** – In this cohort study, 156 patients were investigated. 43 (27.56%) patients were excluded from the study due to heart failure (EF <50%) and 113 (72.44%) individuals remained for the study. Of 113 individuals with an average age of  $69 \pm 8.30$  years, who underwent research, there were 59 (52.21%) females and 54 (47.79%) males. All study subjects, at the beginning of the treatment, have completed the questionnaire for the evaluation of the quality of life: EQ-5D-5L launched by The EuroQol Group. Then, depending on the treatment strategy, they are classified into two groups. Group A 64 (56.64%) patients with rate control. While Group B 49 (43.36%) patients with rhythm control. Both groups, at the end of the treatment, completed the EQ-5D-5L questionnaire again. The results obtained were compared with those at the beginning of the treatment and between groups A and B. Statistical evaluations were made with  $X^2$ , the difference was considered significant if  $p < 0.01$ . Our results are compared to data for the general population assessed with the same instrument (EQ-5D-5L) which has been reported by The EuroQol Group. **Results** – At the beginning of the treatment, the quality of life in the researched subjects was significantly lower than in healthy individuals of the corresponding age. At the end of the research, quality improvement was achieved in group A in all 5 dimensions assessed for the quality of life. Improvement of the quality of life in all 5 evaluated dimensions was also achieved in the individuals of group B. However, no significant difference was observed in the quality of life between the groups, although the individuals of group B have a slightly higher quality of life. better than group A individuals. **Conclusion** – Individuals with atrial fibrillation have a lower quality of life than the general population. Our research has shown that the atrial fibrillation treatment strategy is not important in terms of quality of life for individuals with atrial fibrillation. The decision to select an atrial fibrillation treatment strategy should be made after a comprehensive evaluation of each patient.

**Key words:** Atrial fibrillation, Quality of life, rate control, rhythm control.

# Telemedicine in primary health care, challenge or solution to the problem of medical visits, for family medicine clinics in rural areas!

Agim N. Krasniqi<sup>1</sup>, Merita Shehu<sup>2</sup>, Violeta Bunjaku<sup>2</sup>, Genc Ymerhalili<sup>2</sup>, Merita Bytyqi<sup>3</sup>, Mirëjeta Cakoli-Bajqinca<sup>3</sup>, Sahit Duriqi<sup>3</sup>,

**Abstract** The pilot project in Ambulance of Family Medicine in Village of Kraishtë and Main Centre of Family Medicine in Lipjan: Telemedicine in primary healthcare for the quality of care in times at the time when there are no doctors at Ambulance of Family Medicine (AMF), patient communication through virtual platforms gained momentum in primary health care (PHC) during the COVID-19 pandemic. Thus, there is a need to know the satisfaction and quality of virtual visits through the technologies used and the impacts on people's health. This study will reflect the experience so far in the use of telemedicine in the PHC in the Municipality of Lipjan as a demonstration centre supported by the Accessible Quality Health Care (AQH) project in Kosovo. Methods: This is a scoping review protocol developed according to data recorded in the used platform Hello Care, a patient and staff survey. Questionnaire reviews and meta-analysis of results for scoping reviews. The data are stored in the platform's databases. Quantitative data are analysed using descriptive statistics, while thematic analysis will be done for qualitative data. Preliminary findings will be presented to stakeholders to identify missing studies and develop effective dissemination strategies. Results: Successfully calls: 90, Missed calls: 185, Dropped calls: 8, Aborted calls: 4, phone interview with patient random calls: Very satisfied 34%, Satisfied 56%, Unsatisfied 8%, Very dissatisfied 0.5%, Neutral 1.5%. 4 Doctors who answered the call from the digital clinic participated in the interview. The results from the doctors' interview: Is telemedicine a good way to provide remote services? Yes 75% and No 25%. Are there obstacles or difficulties in the internet network? Yes 100%, Difficulty in making a diagnosis decision? Yes 25% No 75%. Do you have difficulty in making a decision about prescribing therapy since the visit is virtual? No 75% Yes 25%. Telephone interviews with the patients after receiving the telemedicine treatment yielded the following results: Very satisfied 79%, Satisfied 12%, Not satisfied 7%, Not satisfied at all 2% Discussion: From these interviews, although still at the beginning of this project, we can conclude that digital clinics are the future of solving the problem of medical visits in places far from the main centre of family medicine, where there are clinics and nurses of family medicine, it can be an excellent choice for light occasions. However, more difficult cases should be seen by a doctor. Conclusion: Although it is only the beginning of this project, based on the initial results from these surveys, we can conclude that the medical staff and patients are satisfied with this method of communication when there is no possibility and staff for physical medical visits and the coverage is greater of patients in rural areas and faster where the doctor is not present every working day, such as the AMFs where they work according to U/A for POHC only twice a week. Ethics and dissemination: Results will be disseminated through publication in open access UBT scientific conferences, scientific events, and academic and community journals. Ethical approval has been obtained due to stakeholder consultation but will not involve direct patient participation.

**Key words:** primary care; quality in health care; telemedicine.

# Electrochromic properties of nickel hexacyanoferrate thin films prepared by a simple chemical deposition method

I. Aliji<sup>1</sup>, <sup>2</sup>J. Velevska<sup>2</sup>, M. Najdoski<sup>3</sup>

<sup>1</sup>Faculty of Radiology, UBT College-Higher Education institution, 10000 – Pristina, Kosovo

<sup>2</sup>Institute of Physics, Faculty of Natural Sciences and Mathematics, Saints Cyril and Methodius University, Arhimedova 3, Skopje 1000, Republic of Macedonia

<sup>3</sup>Institute of Chemistry, Faculty of Natural Sciences and Mathematics, Saints Cyril and Methodius University, Arhimedova 3, Skopje 1000, Republic of Macedonia

**Abstract** In this work a simple chemical bath deposition method was developed and employed for the preparation of Nickel Hexacyanoferrate (NiHCF) films. The films were deposited by successive immersion of the fluorine doped glass substrates (FTO) into acidic aqueous solution of NiCl<sub>2</sub> and K<sub>4</sub>[Fe(CN)<sub>6</sub>]. X-ray diffraction (XRD), Scanning electron microscopy (SEM) and Atomic force microscopy) confirmed that the obtained NiHCF films had crystalline structure. Cycling voltammetry was performed in order to investigate the electrochemical properties of the films. Visible spectra of NiHCF films were recorded *in-situ* in the both, bleached and colored state. From those spectra were estimated the optical band gaps. The response times of the bleaching and coloring was estimated to an abrupt potential change from -2 V to +2 V and reverse. The coloration efficiency was estimated from the dependence of the optical density on charge density.

**Key words:** chemical bath deposition, Nickel Hexacyanoferrate, thin films, optical band gaps, coloration efficiency.



# Treatment of patients with parenteral/infusion therapy infected with sars-cov-2 in primary health care

Agim N. Krasniqi<sup>1</sup>, Leonit Xh. Bytyqi<sup>2</sup>

**Abstract** The beginning of 2020 took public health around the world with a new type of virus called Sars Cov-2, which for practical purposes was named by the WHO Covid-19. The virus was first identified in Wuhan, China. On January 30, 2020, the World Health Organization declared a public health emergency, while on March 11, it declared a global pandemic. Aim: The purpose of this paper is to obtain data on patients infected with Sars Cov-2 who are treated with parenteral therapy at Primary Health Care (PHC). All PHC staff are constantly at risk of infection with Sars Cov-2. At KHPC, patients are treated with infusions, antibiotics, and anticoagulants. To highlight the role of PHC in managing the Covid-19 pandemic. Methodology: This cross-sectional study was carried out between August 2021 and September 2021 at the Family Medicine Center in Lipjan. As a sample in this study: N=200 patients of both sexes were taken in this study. N=100 patients during the month of August and N=100 patients during the month of September. The research was carried out using the protocol books of parenteral therapy in the treatment room only for patients diagnosed with Covid-19 infection and parenteral therapy prescribed by the doctor. In the months of August and September 2021. Description of practice change implemented: The analysis was performed to reflect differences from treatment with parenteral therapy before the official protocol by health professionals. This survey presents the main findings that have enabled or hindered the full treatment of patients diagnosed with Covid-19. Based on the findings, health professionals will be guided to improve relevant services. Targeted population and stakeholders: All ages that have received treatment as well as the infected PHC personnel. Timeline: August - September 2021. Highlights – Results: Ampoules were given in infusion during the month, of August-September 2021 Total ampoules applied: August-182-F Sep-154-F Aug.-87-M Sep.-121-M Both sexes Aug.-269, Both sexes- Sep.-275. Total amp. 544 from them Antibiotics (Lendacin, Rotacef,Ceftriaxone)-129, Corticosteroids: Prednisolone-86, Dexamethasone-82, Fraxiparine-24, Ketonal-67, Ranital-49, Vit-C-85, Conclusions and Discussion: The implementation of the protocols was inapplicable because it was compiled in August by the Ministry of Health and there were no prior recommendations for the treatment of patients who should be treated with therapy and infusions, as well as the selection of therapy! Discussions: Although the current experience is limited due to the duration and the lack of more analyses, the messages received from patients and professionals are encouraging after the use of therapy applied by primary care physicians. Lessons learned: Protocols must be compiled in time as well as eventual changes by the competent organizations, also the role of nurses in the last filtering before the application of therapy is a very important link. Also in the evidence of this therapy.

**Key words:** Pandemic, Covid-19, Treatment, Treatment with parenteral therapy, infusions, Protective measures.

# **The relationships between some functional and hematological parameters of the young people of Pristina and Sharr age 16-17**

Besir Shaqiri

University for Business and Technology, Pristina.

**Abstract** For the normal functioning of the organism, it is necessary to keep certain factors constant. The most important of these factors are: temperature, acidity, oxygen concentration and nutrients. The primary function of the cardiovascular system is blood circulation, which transports oxygen, nutrients and hormones, or in other words, maintains the homeostasis of the organism at the limit of normal. The cardiovascular system works according to the principles of: a) minute volume b) each organ receives as much blood as it needs c) all adjustments are made without large blood changes. The purpose of this research is to validate the qualities of SKV, the validation of the hematological qualities of the young people of these two countries (Pristina and Sharri), the validation of the factors and the structure within the framework of SKV as well as the validation of the correlation of the proven factors. So, the cardiovascular system is responsible for the well-being of human organization, activity, sports, loads, fatigue, and relaxation etc. The sample of entities is defined by the population of students of the high school of medicine "Dr. Ali Sokoli" of Prishtina and the high school "Emin Duraku" of Sharri. 120 young people were tested.

**Key words:** Organism, functioning, organ, blood, activity, factors, load, etc.

# Creutzfeldt-Jakob disease - Case report

<sup>1</sup>Arieta Hasani Alidema, <sup>1</sup>Melihate Pushka,  
<sup>1,2</sup>Faculty of Nursing, UBT College, Prishtina, Kosova

**Abstract** Jakob-Creutzfeldt disease is a degenerative disorder that causes dementia and eventually death. It is usually diagnosed in the advanced stages because it gives a variety of atypical symptoms until the final stages. This case presentation aims to reflect the case of a woman with pronounced cognitive and psychiatric symptoms and her diagnostic journey until shortly before her death. Case report: The 63-year-old patient had gradually started with subtle psychic changes, in the form of paranoid ideas, anxiety, a state of generally depressed mood, and changes in personality. Gradually the changes became more pronounced and in the last two weeks before hospitalization, she changed completely, slowing down and manifesting a state of psychomotor disturbance with visual hallucinations. After wandering through several clinics of the UCCK, she is hospitalized at the Neurological Department, where a lumbar puncture, MRI of the brain, and EEG are performed. The final diagnosis was made after the arrival of the results, i.e. imaging changes in the nucleus lentiform, nucleus caudatus, and bilateral corona radiata; specific sharp triphasic waves in the EEG and finally the identification of the 14-3-3 protein in the cerebrospinal fluid. Conclusion: CJD disease is rare, but it should be considered in the differential diagnosis as we often have patients with progressive cognitive and psychic changes, along with symptoms such as myoclonus and visual hallucinations.

**Key words:** Creutzfeldt-Jakob disease, cognitive decline, psychic changes, neurodegenerative disorder.

# A case of anti-VGKC antibody encephalitis

<sup>1</sup>MelihatePushka, <sup>1</sup>Arieta Hasani Alidema,

<sup>1</sup>Faculty of Nursing. UBT College, Prishtina, Kosova

**Abstract** Limbic encephalitis is, as the name itself says, inflammation of limbic system and other parts of brain and of a larger group of the autoimmune disorders. Its main characteristic or symptom, is sever affection of the short or working memory. Other symptoms are confusion, psychiatric symptomatology and seizures. Usually the pathophysiologic process is initiated by a paraneoplastic one in making (Limbic paraneoplastic Encephalitis), but this sometime may not be the case (Limbic Non-paraneoplastic Encephalitis). Case Presentation This a case presentation of a 60 years old woman, which is hospitalized in Neurologic Clinic in UCC, Prishtina, because of the seizures, occurring in sleep. After a week severe confusion begins, together with memory loss and then, within a day, generalized epileptic seizures. Also the patient develops marked hyponatremia. The case is diagnosed as Limbic Encephalitis based on clinical picture, imagery (MRI) and specific antibody testing, with VGKC antibody positive titer that is against potassium channels. Conclusion Limbic Encephalitis is very challenging; the discrepancy between the clinical symptoms, encephalopathy, specific antibody titers and limited treatment options makes this diagnosis especially difficult in every aspect of the disease. The pathophysiologic changes associated with this disease remain unclear.

**Key word:** Limbic Encephalitis, VGKC potassium channel voltage regulated channels, hyponatremia, autoimmune epilepsy, MRI.

# Nurses' attitudes about scientific research – A systematic review

Abdullah Gruda, Arlinda Demaj & Andrita Kurhasku  
UBT College – Higher Education Institution

**Abstract** Nursing has been established as a science capable of producing its own knowledge and research. Scientific research in nursing increases the knowledge and improves the skills of nurses in a safer and more motivating environment. Nurses feel more valued and feel that their professional contributions are more recognized when they are part of a research team. The use of research results in clinical practice is important to increase the provision of services based on scientific evidence. Aim: To assess nurses' attitudes towards scientific research and to identify barriers and facilitators of research use among nurses. Method: A systematic review of the literature was conducted in the scientific databases Cinahl, PubMed and Medline. The search was made with the keywords in the English language for the period 2012-2022. Results: A United Kingdom 18% of nurses surveyed did not feel they had the necessary skills to participate in research and that 31% described themselves as not very or not at all confident in discussing research results with patients. In Sweden, nurses had a positive attitude towards research and the use of findings in clinical practice. A study from Norway also noted a positive attitude towards research among nurses, but found that few nurses were engaged in research activities. Barriers to non-participation in research are reported to be lack of time, lack of peer support, limited knowledge and skills for the research process. Facilitators of research use among nurses are managerial, peer support, and additional time needed to review and implement research findings. Conclusions and recommendations: Although nurses' attitudes towards research and development were positive, the implementation of research and development in their daily work was poor. This fact indicates the need for interventions that develop research competencies among nurses.

**Key words:** attitudes, research, barriers, facilitators, nurses.

# **11th International Conference**

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# Transfer of the theoretical knowledge to practical performance in artistic gymnastic lessons at the university level

Milaim Berisha

<sup>1</sup> UBT College, Faculty of Sport and Movement Science, Pristine, Kosovo

<sup>2</sup> Children's Fitness Center of Canada, Canada

**Abstract:** The study aims to determine the transfer ratio of theoretical knowledge to practical knowledge in students of sport science universities during the artistic gymnastic lesson. The study sample consist of 47 students (37 girls and 10 boys) who were in grade two at the coaching, exercise, management, recreation, and enabled people's department of the Sport Sciences Faculty at Istanbul Gelisim University. While the analyses of the student's practical scores consist of Practical Routine (PR: 25%), Assistance in Gymnastics (AG: 15%), and Learning Steeps (LS: 15%), the analyses of the student's theoretical scores are based on General Performance (GP: 10%), Physical Preparation (PP: 15%), Theoretical preparation (THP: 10%), and Technique evaluation (TE: 10%). Also, in order to check the validity of the result, the general scores of online educations were tested. For the data analysis, SPSS 26 programs were used. Descriptive statistics, Pearson correlation, and canonical correlation were used. The results of the study can be defined by the significant correlation between the general score of the students and theoretical ( $p < 0.05$ ,  $r = 0.497$ ), and practical ( $p < 0.05$ ,  $r = 0.920$ ) knowledge. The correlation coefficient of the GS to the practical and theoretical variables has been determined like PR ( $r = 0.686$ ), AG ( $r = 0.799$ ), LS ( $r = 0.799$ ), GP ( $r = 0.720$ ), PP ( $r = 0.685$ ), ( $r = 0.000$ ), and TE ( $r = 0.511$ ). Besides the higher correlation of practical knowledge to the general scores in comparison with the theoretical knowledge, also it can be concluded that while the practice has shown a low ability to explain the theory knowledge, the theory has tendencies to explain the practical knowledge more in the first canonical variable.

**Keywords:** gymnastics curriculum, techniques, practice, theory, students' performance

# The acceptance of telerehabilitation in physical therapy: A systematic review

Ana Sulaj 1, Andromeda (Keci) Lalaj 2 , Angjela Çaveli 3  
Klejda Tani 4

1 Sports University of Tirana, Faculty of Rehabilitation Sciences, Kinesiology Department

2 Sports University of Tirana, Faculty of Rehabilitation Sciences, Kinesiology Department

3 Physical Therapist at Tirana Health Clinic

4 Sports University of Tirana, Faculty of Rehabilitation Sciences, Kinesiology Department

1 [asulaj@ust.edu.al](mailto:asulaj@ust.edu.al) 2 [alalaj@ust.edu.al](mailto:alalaj@ust.edu.al) 3 [cavelianxhela@yahoo.com](mailto:cavelianxhela@yahoo.com) 4 [ktani@ust.edu.al](mailto:ktani@ust.edu.al)

**Abstract:** The aim of this study is to review the data collected from articles, reviews and research papers on telerehabilitation of the last 5 years. We searched the Medline/PubMed, PEDRO and Cochrane Library databases. To find the necessary articles to carry out this review, we have used keywords such as telerehabilitation, digital health and virtual rehabilitation. Articles where the interventions to be evaluated is telerehabilitation by physical therapy of cardiac, nervous and musculoskeletal pathologies, were included. Some studies have shown that the efficacy of tele-rehabilitation is comparable to in person rehabilitation or better than no rehabilitation, while others demonstrate equal efficacy of tele-rehabilitation or even superior than one-on- one physiotherapy. This method was shown to be effective in conditions such as osteoarthritis, low back pain, post-operative patients, multiple-sclerosis, cardiac and pulmonary rehabilitation. Studies showed that a physiotherapeutic intervention with telerehabilitation is feasible and an acceptable method for patients with cardiac, nervous or musculoskeletal conditions. Tele-rehabilitation has shown to be useful in enabling physiotherapists to access patients who are unable to attend one on one rehab because of transportation difficulties and various other reasons for non-attendance.

**Key Words:** telerehabilitation, digital health, virtual rehabilitation



# Assessment of the Foot Deformity and Joint Mobility of the Kosovo Security Force Members

Abedin Bahtiri <sup>1</sup>Faruk Bulliqi <sup>2</sup>

<sup>1</sup> UBT College, Faculty of Sport and Movement Science, Pristine, Kosovo

<sup>2</sup> Universe College, Pristine

**Abstract.** The sole of the foot is an important part of the body which serves to support the entire body mass; therefore, it has an important impact on the whole body in terms of structure and function. The aim of the work was to evaluate the foot alignment of members of the Kosovo Security Force. The sample includes 310 members of the Kosovo Security Force, 140 of them from the 2009 generation and 170 from the 2013 generation. Pedograph was used to assess the foot, while the mobility of the foot joint was done with a goniometer. The obtained results show that in the 2009 generation, 20.9% have flat feet, 61.2% have normal feet and 27.6% have a curved foot, while in the 2013 generation, 24.3% of its members have flat feet, 54.4% with a normal foot and 21.3% with a curved foot. From the obtained results, it has been proven that the members of the two generations of the Kosovo Security Force, do not distinguish much between themselves in terms of foot alignment. Meanwhile, regarding the mobility of the foot, only a difference was found in the dorsal flexion of the foot, in favor of the members of the 2013 generation.

**Keywords:** Foot, pedograph, flat foot, normal foot, curved foot.

# Physiological Health Outcomes of Green Exercise: A Systematic Study

Akan Bayrakdar 1 Işık Bayraktar 2 Agron Thaqi 3

1 2 Alanya Alaaddin Keykubat University, Sport Science Faculty, Alanya, Türkiye

3 UBT College, Faculty of Sport and Movement Science, Prishtine, Kosovo

**Abstract.** This study aims to examine the physiological effects of green exercise. Generally, human and environment interaction studies take into account the extremes of the environment on people or how people affect the environment. It is known that exercise positively affects physiological health. This systematic study addresses declining levels of exercise in today's world societies and how the environment can help facilitate exercise. It also addresses the physiological health benefits that occur when exercising outdoors. Activities in many green environments including forests, seaside, rural areas, parks, green areas, and even gardens, benefit human health. The focus of this systematic study is to examine the literature in relation to the physiological changes that occur as a result of participating in green exercise. Accordingly, English- language articles published in PubMed, Web of Science, Google Scholar, and Sports DISCUS databases that were published between 2015 and 2022 were investigated. In total, 645 articles were studied. 12 of the articles reviewed by experts have been evaluated for use in the study. Studies show that green exercise improves physiological health, prevents diseases at the biochemical level, has a positive effect on rehabilitation programs, and even reduces health care costs. As a result, it is thought that exercising in green areas and outdoors will benefit, especially to overcome the health problems faced by developed countries. In addition, outdoor or nature should not be considered as a playground for people who are just doing extreme sports and looking for excitement, it is very important to distribute it to the whole community in order to improve health.

**Keywords:** Green Exercise, Physiological, Health.

# **International Cooperation Through Erasmus+ and the Tendency to Return to the Normal Educational Process After the Covid-19 Pandemic**

Fadil Mamuti 1, Agim Rexhepi 1, Vullnet Ameti 1, Shpresa Memishi 1,  
Kastriot Shaqiri 1

1 University of Tetova, Faculty of Physical Education, Tetovo, North Macedonia

**Abstract.** The purpose of the Cooperation is the realization an Blended Intensive Programme between universities. The first international program was 5 days project Erasmus+ at a ski resort Popova Shapka in Macedonia between three universities of different countries Bulgaria, Romania and Macedonia. Project Subject: “Skiing and sport animations/game activities for children”. The aim of the training program was for students to organize and implement sports animation programs for children and to teach them skiing, games and other physical indoors and outdoors activities. The sample of entities consists of 20 students and 8 professors. The demonstration method of work as well as other didactic and special methods were used in the educational process. Results and conclusion, the program resulted with professional development of the students for sports games and animation for children, social and communication competences, recognition of intercultural values through traditional games and dances, learning through observation using workshop and video recording on methods of training. The second International programme “Sports Animation for Children and Water Sports” at a Seaside Resort Kiten, Bulgaria was successfully completed. And as a recommendation, projects with an international character supported by Erasmus+ should have priority in higher education.

**Keywords:** International cooperation, Skiing and game activities, Water sports and animations.

# Health Outcomes of Food Advertisements in Digital Games: A Systematic Study

Pelin Avcı 1 Akan Bayraktar 2 Işık Bayraktar 3 Agron Thaqi 4

1 Gazi University, Institute of Education Sciences, Türkiye

2 3 Alanya Alaaddin Keykubat University, Sport Science Faculty, Alanya, Türkiye

4 UBT College, Faculty of Sport and Movement Science, Prishtine, Kosovo

**Abstract.** This systematic study was conducted to evaluate the health outcomes of food advertisements placed in digital games. In particular, it is noted that childhood obesity has doubled in the last 30 years. In parallel, spending on food advertising is increasing. One of the factors affecting childhood obesity is shown as advertisements for foods containing poor micro-nutrients and high- energy nutrients. Most effective food and beverage advertisements include snacks with high salt, fat, sugar, and low nutritional value. Considering all these factors, our focus is to examine the literature regarding how food advertisements placed in digital games affect human health. Accordingly, English-language articles published in PubMed, Web of Science, Google Scholar, and Sports DISCUS databases that were published between 2010 and 2022 were investigated. In total, 947 articles were studied. 13 of the articles reviewed by experts have been evaluated for use in the study. Researchers note that food ads placed in digital games trigger the consumption of fast food and, in particular, carbonated drinks. It is also noted that exposure to such advertising affects the nutritional behavior of individuals of all ages. As a result, it is thought that food ads in digital games directly affect individuals. It should also be noted that the researchers' conclusions that people who are exposed to advertisements of unhealthy food for a short time have an increased intake of nutrients.

**Keywords:** Digital Gaming, Nutrition, Advertising, Health.

# **Relations of some anthropometric characteristics on the performance of motor tests of high school students -grade 10**

Shkumbin Hoxha 1

1 AAB College, Physical Education and Sport Department, Kosovo

**Abstract** The purpose of this research is to analyze some anthropometric parameters and their effect on the performance of motor tests. Methods: the study was conducted on a sample of 60 students, students of the high school “The British School of Kosovo”; 10<sup>th</sup> grade, 40 men and 20 women. Anthropometric parameters such as (length, weight, body mass index, arm length, leg length) and motoric tests (Ilion’s Agility Test, 10- meter run, tapping test, vertical jump, side steps, long jump, throwing the medicine ball from the chair, throwing the medicine ball behind the head, 20m run from the high star) were used. The statistics obtained were provided by descriptive statistics, and correlation according to Pearson linear – bivariate method. Results: According to the descriptive statistical analyses, all anthropometric and motoric parameters have shown normal distribution, except Ilion’s Agility Test and throwing the medicine ball from the chair, which has shown positive distribution on skewness and kurtosis value. According to the correlations Pearson linear – bivariate analyses, all anthropometric parameters have shown significant correlations with motoric parameters ( $p = 0.01$ ). Conclusion: It can be concluded that all anthropometric parameters which we chose for this research have shown high correlations with motoric parameters, so higher, leg length, and hand length have shown high correlations with the vertical jump test

**Keywords:** anthropometric parameters, motoric tests, students’ performance

# The main reasons for the career end of professional male soccer players in Kosovo: Preliminary results

Masar Gjaka 1 , Kaltrina Feka 2 , Antonino Bianco 2 , Antonio Tessitore 3

1 Department of Sport and Movement Science, University for Business and Technology, Pristina, Kosovo

2 Department of Psychology, Educational Science and Human Movement, University

of Palermo, Palermo, Italy

3 Department of Movement, Human and Health Sciences, University of Rome 'Foro

Italico', Rome, Italy

**Abstract:** The literature investigating athletes' sport careers is usually focused on a variety of different aspects. However, the information regarding the reasons for the career end of professional soccer players, especially in Kosovo, is missing. Therefore, the purpose of this study was to identify the main reasons why professional soccer players end their career. For the purpose of this retrospective cross-sectional study, a previously validated questionnaire was administered to 100 retired soccer players, of which 54 filled it and were considered for the analysis. Among the participants, a 50% (n=27) used to play in the Superliga, which is the highest soccer level in Kosovo; a 24.1% (n=13) in the 1st League; and a 25.9% (n=14) in both leagues. The questionnaire included questions related to the reasons of professional career end and other aspects related to the professional soccer career. Most of the 54 respondents (70.4 %; n=38) declared a non-medical reason as the main one leading to their professional career ending, while medical reasons (29.6%; n=16) were highlighted as the second main factor. Among the main non-medical reasons, the highest percentage was registered for other job (61.5%); n=24) then personal reasons (28.2%); n=11) followed by age (10.3%; n=4).; Among the main medical reason were reported acute injury (68.8%; n=11), chronic injury/series of injuries (31.3%; n=5). Based on the preliminary results we can conclude that non-medical reasons are the main factors having the biggest impact on professional soccer players' retirement.

**Keywords:** Retirement; Football; Professional players

# Effects of the stationary vertical and horizontal jump on the dynamic vertical jump technique

Nagip Lenjani 1

1 UBT College, Faculty of Sport and Movement Science, Pristine, Kosovo

**Abstract.** The aim of the study is the determination of the effect's ratio of the stationary vertical and horizontal jump on the dynamic vertical jump technique which may be useful in order to determine which method of measurement for dynamic vertical jump may be more valid and reliable. In the study 40 boys whose age is 11-12 were included in the study. In order to reach the aim of the study; Stationary vertical jump, Stationary horizontal jump, and Dynamic vertical jump tests were applied. Data analysis was made by using SPSS 26 packet program, descriptive statistics, Pearson correlation, and linear regression analysis was applied. The results of the analysis have shown that there are statistically significant correlations between stationary horizontal jump and dynamic vertical jump technique ( $r=.395$ ), and stronger correlations have been detected between stationary vertical jump and dynamic vertical jump technique ( $r=.879$ ). The regression analysis has shown that these results can be explained at a ratio of 77%. Based on the results of the study, it can be concluded that in comparison to the horizontal jump ratio, the vertical jump ratio is more important for the dynamic vertical jump. So, in order to estimate the dynamic vertical jump, there is not important for athletes how long they jump as it is important to determine how high they jump in a stationary trial. However, based on the regression results, these results may differ by around 23% in case non-analyzed factors effects may be included in the analysis.

**Keywords:** Lower Body, High Speed Strength, Jump Technique

# Emergencies in Sports

Lindita Agolli 1 Altin Erindi 1

1 2 University of Sports of Tirana, Kinesiology Department, Albania

**Abstract.** The current study was done with the objective of assessing the awareness and attitude regarding first aid among the master students at the Sport University of Tirana. A questionnaire on medical emergencies in sports has been created. The questionnaire is divided into 6 sections. It was carried out in 96 students of the master's degree of the first year in 2019-2020. This included questions on awareness of first aid measures for various situations as well as questions to capture attitude of students regarding first aid. As a result of the study, 86% had knowledge about emergencies in sports, for loss of consciousness 82%, for neck trauma, 84.5%, for heat stroke 43%, management of hyperthermia 83%, for hemoglobinopathy 54%, no knowledge of the sudden death management, for the management in the ABC concept, 96% and for brain trauma 56%. The score shows a positive attitude toward learning first aid. The main question which rises is does incorrect first aid do more harm than good. The answer is people who are not sure of what first aid measure to take in a situation usually do not venture to do it. Second, we found that the popular knowledge regarding first aid among the students is full of misconceptions and wrong information. This pleads for the addition of first aid training in the curriculum.

**Keywords:** First Aid, Sports, Students



# Evaluation of Balance Performance of Children with Intellectual Disability

Mehmet DİNÇ 1, Ayşe Funda KESER 2 , Yaren ATMACA 2  
and Sibel NALBANT 3

1 Alanya Alaaddin Keykubat University, Sport Sciences Faculty, Graduate Student/  
ANTALYA

2 Physical Education and Sport Teacher/ ANTALYA

3 Alanya Alaaddin Keykubat University, Sport Sciences Faculty, Associate Professor/  
ANTALYA

lncs@springer.com

**Abstract.** The aim of the study is to evaluate the functional balance in daily living activities of individuals with special needs with mild intellectual disability (ID). The research was carried out on a total of 100 students, 35 females and 65 males, who were studying at Alanya Special Education Vocational School in the 2021-2022 academic year, with an average age of 16.9. In the study, “Pediatric Balance Scale (PBL)” and “Special Needs and Family Information Questionnaire Form” developed by the researchers were used. Statistical analysis was performed to determine whether the functional balance levels of the participants made a difference according to the variables of age, gender and physical activity level and participation status. As a result, physical activity (PA) Participation Status variable; They were examined in two groups as those who regularly participated in PA and those who did not participate in PA. It was determined that there was no statistically significant difference in terms of functional balance scores between those who participated in PA and those who did not, but the mean functional balance scores of those who participated in PA ( $X=50.13$ ) were higher than those who did not participate in PA ( $X=48.09$ ). Based on these results, it is recommended to test balance skills by participating in long-term and regular physical activity and to use measurement tools whose validity and reliability have been tested in the evaluation of PA in studies that will examine balance skills in children with mild ID.

**Keywords:** intellectual disability, balance, performance

# Technological innovations in physiotherapeutic rehabilitation

Andromeda (Keci)

Lalaj 1 Ana Sulaj 2, Vjollca Shpata 3 , Jonida Drizaj 4

1 Sports University of Tirana, Faculty of Rehabilitation Sciences, Kinesiology Department

2 Sports University of Tirana, Faculty of Rehabilitation Sciences, Kinesiology Department

3 Sports University of Tirana, Faculty of Rehabilitation Sciences, Rehabilitation Department

3 Sports University of Tirana, Faculty of Rehabilitation Sciences, Rehabilitation Department

1 [alalaj@ust.edu.al](mailto:alalaj@ust.edu.al) 2 [asulaj@ust.edu.al](mailto:asulaj@ust.edu.al) 3 [vshpata@ust.edu.al](mailto:vshpata@ust.edu.al) 4 [jdrizaj@ust.edu.al](mailto:jdrizaj@ust.edu.al)

**Abstract:** The study aims to understand the effectiveness of the technological innovations implemented in physiotherapeutic rehabilitation. In order to conduct this review during the search there were used keywords like robotic devices, mobile applications, virtual games and rehabilitation. 120 results were displayed, from which, after reviewing the preliminary titles, about 60 articles were deleted along with duplicates. From the review of the abstracts, 20 of them were selected after meeting the inclusion criteria. The articles have been selected from trusted sources such as PubMed & Wiley Library. Included in this review are all articles which consider the role of robotic devices, virtual games and mobile apps in physical rehabilitation. Also, excluded are articles that focus on the engineering and design part of games or articles that focused only on patient diagnostic equipment. The use of technological devices such as lokomat, exoskeletons and walkbots has shown effectiveness in the rehabilitation of patients by improving gait, speed and balance. Also, VR games and mobile apps promote the acceleration of rehabilitation time and patient engagement. The use of lokomat and VR enables effectiveness in physical rehabilitation in combination with conventional therapy. Mobile apps as a new tech approach should be further consider in new studies for their effectiveness as home rehabilitation form.

**Key Words:** Robotic devices, rehabilitation, lokomat

# **Anxiety of Individuals Who Are Member of Different Sports Centre To Be Caught With Coronavirus**

Yasemin YALÇIN 1 and Fatma TURAN 2

1 Alanya Alaaddin Keykubat University Faculty of Sports Sciences, Alanya, Antalya,  
TURKEY

2 Alanya Alaaddin Keykubat University Faculty of Sports Sciences, Alanya, Antalya,  
TURKEY

yasemin.yalcin@alanya.edu.tr

**Abstract** In this study, it is aimed to examine the concerns of catching coronavirus of individuals who are members of different sports centers and to determine the differences between the concerns of catching the corona virus according to the independent variables obtained from the personal information of the individuals participating in the research. The study group of the research consisted of individuals who are members of sports centers in Alanya. In order to examine the anxiety of individuals who are members of different sports centers about catching coronavirus, the “Athlete’s Anxiety to Catch the Novel Coronavirus (Covid-19) Scale (AACNCS)” developed by Demir and Cicioğlu and İlhan (2020) was used in the research. It was decided whether the data met the prerequisites of the parametric tests by examining the Skewness and Kurtosis (normal distribution of the data) values and the Levene (equality of variance) test results. In this direction, t-test and ANOVA tests were applied to evaluate the levels of AACNCS according to the various demographic characteristics of the participants. As a result of the research, it was determined that there was no significant difference in the anxiety of catching coronavirus of individuals in different sports centers according to the type of sports center (pilates studio and fitness center) variable. Although the effect of the pandemic on people has started to decrease in recent times, institutions or organizations should pay attention to the hygiene of sports facilities and sports equipment and should not allow factors that will cause any anxiety in individuals who do sports.

**Keywords:** Coronavirus anxiety, sports, members of the sports center.

# The effect of the plyometric program on jumping performance

Astrit Iseni 1 Artan Kryeziu 2

1 University of Tetova, Faculty of Physical Education-Tetovo, North Macedonia

2 UBT College, Faculty of Sport and Movement Science, Prishtine, Kosovo

**Abstract.** The aim of this research is to prove the effect of plyometric program for the development of explosive force on the performance of jumping in students. The research was conducted on a sample of 220 male aged 15 years  $\pm$  6 months, students at high schools “Sami Frashëri” and “Ismet Jashari”- Kumanovo. In this research, were used a total of 3 specific-motor variables for the evaluation of long jumps: 1) long jump from (SMLJP), 2) triple jump from (SMTJP) and 3) high jump from (SMHJP). The research had a longitudinal character, and lasted a total of 12 weeks, with 36 hours of training. In order to confirm the differences between the control and experimental groups, in the initial and final measurements, were used univariate and multivariate analysis of variance and covariance. From this research we can conclude that the variables for the assessment of specific motor skills do not have statistically significant differences between the control and experimental group in the initial measurements, while after applying the experimental model in the final measurements, we can see that the three specific-motor variables have statistically significant differences with long jump from  $p=0.047$ , triple jump from  $p=0.026$  and high jump from  $p=0.019$  between the control and experimental group, which can prove that this training model has a significant impact on the development of explosive force in the performance of jumping, and the same model can be used on elite athletes

**Keywords:** Plyometric model, specific motor skills, training process, jumping, students.

# Differences in morphological and motor skills according to positions in national women`s Basketball

Artan Kryeziu 1 2 [0000-0002-3097-4952] Enver Tahiraj 3 [0000-0002-7225-7409] Astrit Iseni 2 4 [0000-0002-6631-5510]

1 UBT College, Faculty of Sport and Movement Science, Prishtine, Kosovo

2 Center of Researcher, Studies in Physical Education, Sport and Health-CRSPES, Kosovo

3 MKRS-Department of Sports

4 University of Tetovo, Faculty of Physical Education-Tetovo, North Macedonia

**Abstract:** The aim of the paper differences in the morphological and motor skills according to the positions of the game in the players of the women`s national basketball team. The participants measured in this paper are 13 senior women`s basketball players divided according to the game positions, such guards (n=4), forwards (n=5) and centers (n=4). In this study, 14 morphological and motor skills were applied. For each variable, the central parameters arithmetic average (Mean) and standard deviation (Std. Dev.) which the dominant values were determined according to the positions of the game. These results showed significant statistical differences through multivariate analysis of variance (MANOVA) showed differences between the game positions as it is in abdominal skinfold (.037\*), standing high jump (.053\*) and the performance of the Beep test showed a low value (073\*), while the indicators of body height, body mass index, subscapular skinfold, handgrip dynamometers, speed, agility and maximum oxygen value (Vo2max) did not show significant differences between the playing positions. It was concluded that there were low differences in morphological and motor skills according to the playing positions among the women`s national basketball players.

**Keywords:** Basketball, morphology, motor, game positions, women`s, national team A

# **Sport, reduction of indirect musculoskeletal injuries, improve athletic performance and sporting longevity**

Antonio Imeneo 1 Stravi Bello 2

1 UniFUNVIC Europa, International Research Center Europe- Brasil/Bruxelles/Rome

2 Institute of Sport Research, Tirana Sports University

Str." Muhamet Gjollës"1001-AL, Tirana, Albania

**Abstract:** The research aimed to demonstrate how the stomatognathic system, muscle, fascial and connective tissue chains, generate dysfunctional postural compensation that causes indirect injuries in sport. Multidisciplinary Integrated. Diagnostics-MID, is used to measure the musculoskeletal system, correlating the entire fine postural system. Diagnostics analyses musculoskeletal information in both asymptomatic and symptomatic conditions; it is repeatable, scientific, non-invasive. We tested a total of 50 young sportsmen and sportswomen, in the 15-25 age group, each with an unknown etiology. In most cases, correct dental integration and correction results in a benefit of painful skeletal muscle symptoms and less consumption in the proprioceptive functional response. In patients who have not improved after occlusal correction, the body's difficulty in accepting a positive stimulus is observed, where the expenditure of the reflex neuronal system is greater than that already in use by the same subject. Dysfunctional and non-dysfunctional body ergonomics maximizes its mission in the absence of pain with a minimum expenditure of energy, whatever the corrective means (visual, dental, vestibular, plantar), will have to deal with the control mechanisms to lower the general state of activation. For this reason, the differential and multidisciplinary diagnostics of the MID protocol is essential to identify and prevent musculoskeletal dysfunction, sports injuries and therapeutic follow-up.

**CHAPTERS:**

- Computer Science and Communication Engineering
- Management, Business and Economics
- Mechatronics, System Engineering and Robotics
- Energy Efficiency Engineering
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Lagjja Kalabria p.n KS - 10000, Prishtinë

+383 38 541 400

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