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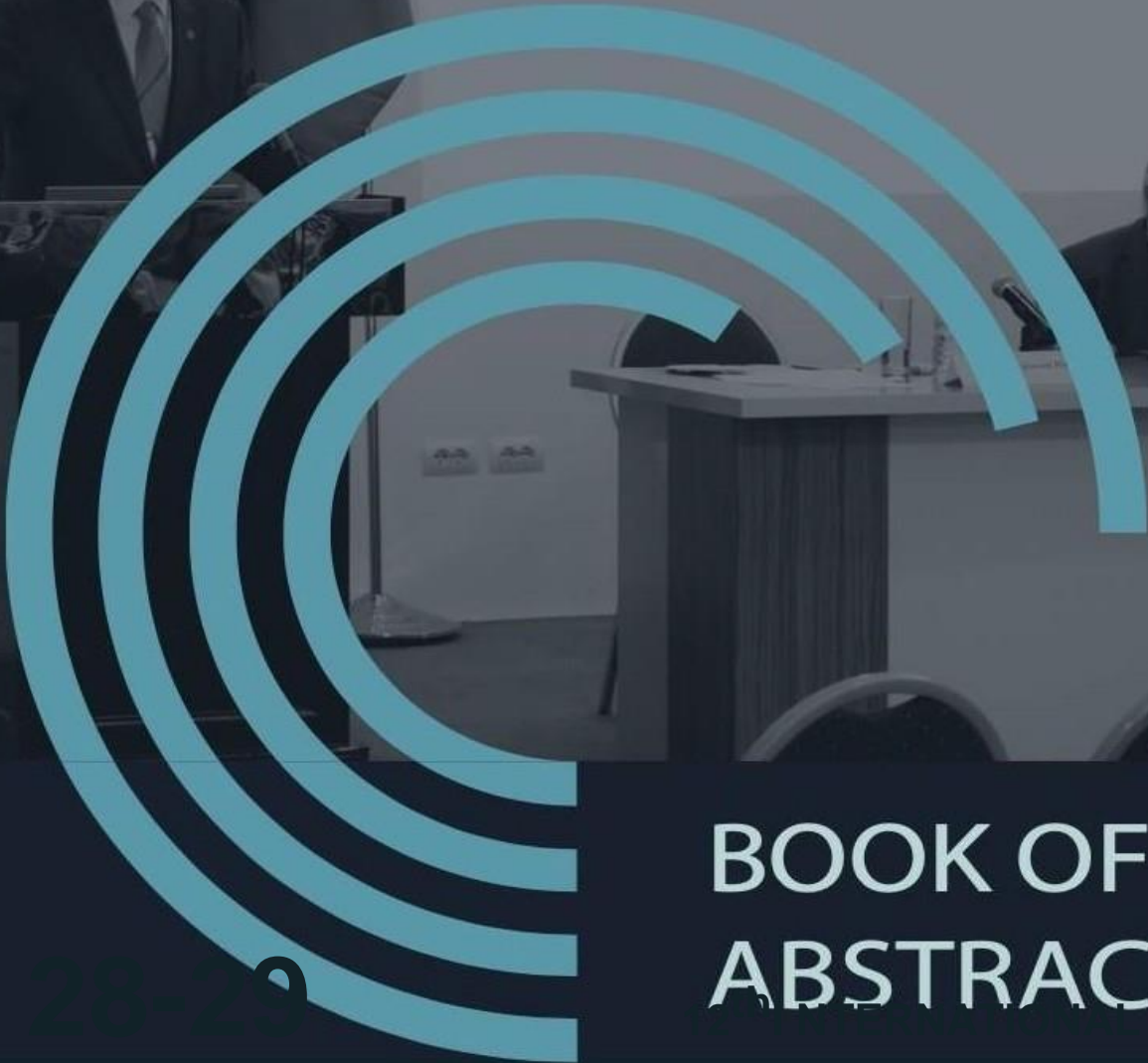


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# BOOK OF ABSTRACTS

**OCTOBER  
UBT INNOVATION  
CAMPUS, KOSOVO**

**CONFERENCE ON  
BUSINESS, TECHNOLOGY  
AND INNOVATION  
2023**



# BOOK OF ABSTRACTS

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- Chapter:** Journalism Media and Communication
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- Chapter:** Modern Music, Digital Production and Management
- Chapter:** Political Science
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# **IC- JOURNALISM MEDIA AND COMMUNICATION**

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# Requirements and elements of the use of social media TikTok by Teenagers in Albania

Anila Prethi

Journalist, Durrës

anilaprethi@gmail.com

**Abstract.** In the era of social media, where information and communication are distributed rapidly, TikTok has transcended being merely a video-sharing application. This platform has created a unique communication ecosystem, transforming how users share, consume, and engage with digital content. This study analyzes the use of the TikTok social media platform by adolescents aged 14-18 in Albania, focusing on the demands and elements that make the content appealing to this age group. Based on data analysis from surveys conducted with adolescents and interviews with communication experts, we have identified adolescents' preferences regarding the attractive elements and content offered by TikTok. Our findings shed light on how adolescents use this platform to express their identity, as well as the reasons behind the dissemination and consumption of digital content. Additionally, this analysis contributes to understanding the fundamental shifts in communication paradigms in the era of social media.

**Keywords:** social media, TikTok, adolescent, digital content

# Countering disinformation and fake news and the tools to deal with it

Mrs. Armela Krasniqi

armela.krasniqi@ubt-uni.net

**Abstract.** This article aims to reflect the current state of regulation of the concept of disinformation and the spread of fake news in Albania. The article analyzes the concept of disinformation, the purpose of regulatory measures against disinformation, and that their content and implementation can only be correctly tackled if a comprehensive approach of national and international legislation, regulatory and co-regulatory aspects and joint efforts with the general public is considered. What is actually disinformation? Disinformation is defined as false or inaccurate content, which is spread through media tools, with the aim of deceiving or securing economic or political benefits, and which may cause public harm. Disinformation is easily created by digital tools such as image manipulation, spreads rapidly through social networks and other online services, and can be artificially amplified by manipulative measures such as artificial intelligence. The spread of misinformation can have a number of harmful consequences, such as threatening the rule of law, polarizing debates and endangering the health, safety and environment of citizens of our societies. The measures of the regulatory authorities against such "harmful" contents are delicate, because they constitute, in essence, an interference with the freedoms of speech that go beyond the general laws and the rights of third parties. In fact, very few national laws recognize a precise legal definition of disinformation. Specifically, the Albanian national law (law no. 97/2013 "On audiovisual media in the Republic of Albania, amended) does not define "disinformation", or in general the so-called "disorder of information", but it contains elements that include the obligation of the broadcasting entities of a balanced, professional and ethical reporting of the content, for verification of facts, as well as the right of the injured party to file a complaint about a broadcasted or published content. For example, during the election campaign process, each subject has the right to address the AMA (in accordance with point 3 (b) of article 51, of law no. 97/2013, amended) and the State Election Commissioner for various complaints about the content transmitted. Also, every subject has the right to appeal to the court. However, the risk of the public falling prey to disinformation campaigns is a major challenge, not only for Albania and the Western Balkans region, but also for Europe, and as such, requires a coordinated response from national regulators, EU institutions, online platforms, news media and all citizens. It is important to note that the European Commission has developed a number of initiatives to tackle disinformation and ensure the protection of EU values, such as the EU's Enhanced Disinformation Code, or the Digital Services Act (DSA). While these legal acts serve as good practices and guidelines for national regulatory authorities to carry out their work in dealing with disinformation, a broader approach of cooperation of all relevant actors should be taken, especially in strengthening media literacy among young people and other vulnerable groups.

**Keywords:** Disinformation, regulatory authority, fake news, media literacy

# Language Challenges on National Television in North Macedonia

Dr.sc. Valdeta Kasapi

University for Business and Technology, Prishtina, Kosovoval-

dete.kasapi@ubt-uni.net

**Abstract.** This paper will elaborate the language spoken on National Televisions in North Macedonia, comparing it with Televisions of the Republic of Kosovo as the two multi-ethnic states that emerged from the Balkans. Furthermore, making a comparison with Televisions in Belgium, more precisely in Brussels, one of the cities with many ethnic colors, as well as a state of the European family- an aim of many Balkan states. Active speech, as a key activity of sociological, communicative and linguistic identity to people, gives anthropological characteristics and values. Language with its characteristics varies constantly, it is created, developed, depending on the changes of people and society. This indicates that people have a close relationship with 'language', without which they cannot create communicative bridges in any society. Despite the many meanings of the term communication, essentially it means information sharing with other individuals. To communicate means to convey information and exchange ideas, even when this exchange of information is unintentional. This paper will also deal with language policies, which nowadays have significant impact on social cohesion, even though in many Balkan states it remains only paper written. The qualitative aspect and quantitative parameters of the 'variety of language' in electronic media. How 'language rules' are implemented in the media in the Republic of North Macedonia and their impact on democratic capacities of the country. Directions and solutions to these problems. Language is and remains one of the most important elements of the identity of citizens in a country. The state therefore must communicate with citizens to strengthen loyalty and a sense of connection, as well as the feeling that citizens belong to that country

**Keywords:** televisions, power, medium, speech, spoken language, communication, language policies, information.

# Language of News: Narration and Foreign Language Expressions in Online Media in the Albanian Language in Kosovo

Ferid Selimi

ferid.selimi@ubt-uni.net

**Abstract.** This paper examines the role of news language in shaping news narratives. Despite the majority of online media outlets in the Albanian language in Kosovo being a transition from traditional print newspapers and relatively new in age, they have evolved their narratives. The findings indicate that these outlets do not employ the same language and narrative as they did in their print counterparts. This new language adopted by online media has contributed to the creation of distinct public discourses through the selection of narratives and the language they employ. Just as language is a socially constructed form of communication, news constructed in that language has its own linguistic varieties. Similar to how language continues to change in its content and structure to adapt to the diversity of social and cultural demands, it also influences the evolution of news language. This is particularly evident when comparing articles from the time of print publication to those published online today. The research employs a comparative method, examining the use of standard language as well as foreign expressions. It concludes that during the time when these newspapers were printed, Latin expressions were more commonly used, whereas online media relies on English expressions that replace Albanian ones.

**Keywords:** language, narratives, news, Online media, traditional print newspapers

# News Production in Sports Journalism in Turkey: The Case of İHA

Çağdaş Ceyhan

Anadolu University; Communication Sciences Faculty; Journalism Department

**Abstract.** For many years, sports journalism in Turkey has been based solely on football. Except for the international successes of the Men's Basketball National Team and basketball clubs from time to time or the championships of the Women's Volleyball Team in recent years, other sports, especially amateur sports, are reported in a limited way. This study will try to analyse sports journalism in Turkey through agency journalism. The processes of deunionisation and the precariatization of labour in the Turkish media have led to the news sources of newspapers and televisions being largely dependent on agencies. The study will have two main axes. Firstly, it will question how news production processes are shaped by the reporters working in the Istanbul bureau of İhlas News Agency (İHA), and how journalism, traditionally hegemonised by football and Istanbul teams in football, shapes the reporters' perspectives. In another stage, it will be tried to question how working conditions and social media affect news production processes. In the study, in-depth interviews will be conducted with sports reporters working in the Istanbul office of İhlas News Agency.

**Keywords:** sport journalism, news production, agency journalism, İHA, reportes

# **Sensitive news reporting on conflicting situations– Mitrovica case**

Msc.Musa Sabedini

<sup>1</sup>UBT –High Education Institution, LagjjaKalabria, 10000 p.n., Prishtinë, Kosovë

musasabedini@hotmail.com

**Abstract.** I titled this topic ‘Sensitive news reporting on conflicting situations’ to narrow the focus mainly on the existing and nearly continuous problems occurring in the Mitrovica region and its surroundings, Leposaviq, and other problematic towns. Electronic and broadcast media are experiencing serious problems reporting from the said areas, including threats, time pressure, lack of security in the field, lack of institutional protection, and physical assault against them. Though monitored by many relevant factors, including UNMIK, OSCE, KFOR, Kosovo Police, and other organizations and institutions, the Mitrovica region as an area with plenty of security problems due to incessant conflicts, remains a problematic place to be covered by the media outlets. Mistakes of the March 2004 riots are still fresh in our memories when international institutions pointed out failures in the coverage, especially those aired by young and inexperienced journalists reporting from the field. The main dilemma lies exactly here. Do Kosovan media need to be emotionally induced or should strive for unbiased and professional reporting when covering sensitive situations? There are plenty of processes and techniques as to how media can create a better professional approach when it comes to the nature of reporting in extraordinary situations. Extraordinary situations require a different approach and the highest attention for every detail or obstacle presented. In the day-to-day work of a journalist neither ‘miracles’ nor ‘obstacles’ happen every day, therefore a journalist must understand that difficulties will be present at every stage of their development. A journalist punches a good report as long as he or she respects the hot spots articulated again and again by many authors and journalism scholars. This work is designed to elaborate on the proper coverage details by offering professional guidelines and agendas.

**Keywords:** Mitrovica, conflict, insecurity, extraordinary, professional, riots, etc.



# **The impact of intercultural communication on tourism and its challenges. The case of the tourist boom in Albania, year 2023**

Votim Hanoli

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

votim.hanoli@ubt-uni.net

**Abstract.** Albania, for the summer season, marked an extraordinary tourist boom, in all types of tourism (coastal, mountain, tourist, culinary, historical, dental, etc.). Thanks to technology, this resonated in various media in all parts of the world, because through communication through the highest technology, we come into contact with people who are very different from us. But, of course, like any good, and this is accompanied by its own challenges, the fulfillment of goals for increasing quality and many factors that accompany it. Growing businesses find they must sell globally to compete. Moreover, there are other factors in the buying of the global market, in this case the tourist market. It is known that tourism brings benefits to tourism communities, which thrive as a result, and that interacting with tourists can foster a sense of cultural pride and open a window to the outside world. This paper aims to identify, show, analyze and highlight which aspects of communication should be used to improve, change, or transform the approach of tourism to the challenges of intercultural communication. What are the goals, expectations and costs related to this and how do the contexts present different cross-cultural challenges? How much, economic development, will lead to increased demand for intercultural communication and vice versa seeing that economic developments promote intercultural interactions?

**Keywords:** intercultural communication, influence, tourism, challenges, globalizati

# **The Journalistic I when reporters became target of political hostilities: the case of 2023 protests in Northern part of Kosovo**

Gjylie Rexha

gjylje.rexha@ubt-uni.net

**Abstract.** In May and June of 2023, journalists from the Albanian community, were subject of assaults, by the groups of Serbian protesters in Northern part of Kosovo. This study elaborates the impact of hostilities toward journalists, on their reporting and emphasis of Journalistic I. Two qualitative methods: interviews and critical discourse analyses, serve to evaluate and interpret the impact of hostilities on objectivity, impartiality, interpretive journalism and byline subjectivity. The study concludes that in practice, there is a blur line between concepts in complex political situations. The Journalistic I can offer better understanding of the events, but in the same time, can attract the attention from reported events.

**Keywords:** Journalistic I, byline subjectivity, political reporting, objectivity, Kosovo

# The novel “*Ikja e shtërgut*” and Lasgush Poradeci

Prof.ass. dr. Xhevahire Millaku

UBT, Prishtina

**Abstract.** The Kadare's novels in terms of textual and narrative weaving are presented with a wide and multi-dimensional scope. Based on the time span, as the creative period of the author himself, but also of this study we will single out the novella “*Ikja e shtërgut*”. The novels are an integral part of Ismail Kadare's entire creativity, even the novel is considered the starting point of the author's entire work. This contribution has verification and in next novel's ‘*Në dheun e panjohur*’, that has written in his 17 years old, and he was in the elementary school, so before to publication his first book with poetry ‘*Frymëzime djaloshare*’ in 1954. The period of times of the communist dictatorship in Albania is ranked as one of the most difficult times for the Albanian people. At this time Kadare's was only eight years old. Iron or communist Albania. This novella is first of all dedicated to the prominent Albanian poet, Lasgush Poradeci in the circumstances of totalitarianism and communist deposition.

**Keywords:** The novel, “*Ikja e Shtërgut*”, communism, totalitarianism, the Albanian people.

# The position of Albanians in Serbia in the field of media

Illir Zylfiu

Illir.zylfiu@ubt-uni.net

**Abstract.** Public information and the media issue in general is not only a media issue, but above all an important political, cultural and social issue. In the political sense, media rights mean the right to information in the mother tongue, freedom of expression in minority languages, adequate financing of media content in minority languages, respect for the values of the multicultural society. This matter is governed by the laws in force of the respective state. According to the current laws, information in minority languages has three pillars: the first pillar is represented by public media services (RTS and RTV), the second pillar is established by national councils, and the third pillar is private media. Albanians in the Republic of Serbia live in three municipalities. In two municipalities, that of Presevo and Bujanocë, they make up the majority of the population. Considering their status as a minority, it is natural that their rights in the field of media will be treated from this prism. In this paper, attention will be paid to the historical retrospective in the field of media, in the sense of the beginning of the creation of local public televisions in the Albanian language. The law on the media will be analyzed as well as the action plan for the exercise of minority rights. The space that Albanians have on national public TV will be analyzed. Special attention will be paid to the financing of the media operating in Presheva, Bujanocë. The challenges faced by the media in the two municipalities with an Albanian majority will be highlighted. The reports of international institutions on the issue of media among minorities will be analyzed, taking into account the position of Albanians. At the end, an overview will be given of the rights of Serbs in the Republic of Kosovo in the field of media, in a comparative sense.

**Keywords:** media, law, constitution, minority, portals.

# Ukraine - Russia, a "forgotten" war in the media of the Western Balkans

Safet Zejnullahu

Media and Communication Faculty, University for Business and Technology

safet.zejnullahu@ubt-uni.net

**Abstract.** Russian aggression in the independent state of Ukraine, launched on February 24, 2022, dominated the media in the Western Balkans for months. The differences in the reports were obvious, from the approach (depending on the political stance of the given state), to the terminology and the space given to the developments in and around the battlefield. The changing shape of reporting from the war, as a result of technological possibilities, has affected the volume of news, but has also increased the opportunities for fake news and propaganda. When more than a year and a half have passed since the beginning of the war and when it continues with almost the same intensity, it is the media in the Western Balkans that deals less and less with this war. A parallel between the reports of the first months and now, reveals the effects and defects of reporting, but also the tendency to forget a war, except in cases where the number of victims within the day is very large.

**Keywords:** War, Ukraine, Russia, Media, Western Balkans

# **IC-MANAGEMENT BUSINESS AND ECONOMY**

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# The Innovation Ecosystem of Kosovo with a focus on UBT

Gerson Cornejo, Naveed Ahmed, Edmond Hajrizi, Faton Limani

UBT-Higher Education Institution, Kosovo

{ehjarizi, faton.limani}@ubt-uni.net

**Abstract.** With a thriving innovation environment that presents exciting prospects for expansion, Kosovo has become a prominent player in the global innovation scene. An overview of the innovation ecosystem in Kosovo is given in this abstract, with special attention to the University for Business and Technology's (UBT) contribution to regional innovation, entrepreneurship, and technological breakthroughs.

Kosovo is a young, aspirational country that has encountered many difficulties in the years following the conflict. It has, nevertheless, proven remarkably resilient and determined in creating a thriving atmosphere for business and innovation. UBT is a premier organization in Kosovo committed to promoting innovation and technical development, and it is at the center of this revolutionary adventure.

A dynamic interaction between different stakeholders, including as government agencies, academic institutions, startups, well-established companies, and civil society organizations, characterizes Kosovo's innovation ecosystem. As a result of this cooperative effort, innovation centers, incubators, and accelerators have been established to promote and foster the expansion of small and medium-sized businesses (SMEs) and startups. UBT, being a trailblazer in Kosovo's higher education sector, is essential in forming this ecosystem with its academic offerings, research projects, and collaborations with business.

**Keywords:** Research Development, International Collaboration, Startup Incubation and Acceleration

# **An analytical approach to more sustainable and contemporary marketing strategy**

Ylber Limani and Argjenda Lubishtani

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

{ylber.limani, 2al41434}@ubt-uni.net

**Abstract.** This paper represents a critical analysis and review of marketing literature covering recent studies on marketing issues related to the concept of sustainability. In the face of growing criticism of a one-dimensional profit-driven approach, we consider the marketing concept requires rebranding to address sustainability issues. An intensive strategic discussion and decision-making are required regarding the need to change the attitudes that promote and implement contemporary marketing strategy. The change should impact the consumption model through the creation of commercial proposals, which will positively shape the future of market exchange, social life and eco-systems. Moreover, businesses should present to consumers an attitude of active and responsible management, who is capable and willing to take the responsibility regarding this change.

**Keywords:** marketing, strategy, digital technology, sustainability.



# **Economic Regionalization in Africa: Challenges and Perspectives of the African Continental Free Trade Area (AfCFTA)**

Kamal Tasiu Abdullahi

Department of Economics, Faculty of Economics, Istanbul University

kmlts256@gmail.com

**Abstract.** Since the year 1980, there has been a noticeable increase in nations' propensity to regionalize their economies. The author claims that because regionalization and globalization are intertwined processes, this regionalization either reflects countries' determination to defend themselves from the negative effects of globalized free trade or it is a new type of worldwide free trade. Since then, the number of regional trade agreements that bring about this economic regionalization has skyrocketed. The reasons behind this explosion are that, in theory, regionalization should enable better integration and increase household welfare by removing tariff and non-tariff obstacles in a region. Africa has a number of regional economic organizations that frequently overlap, adding to the global phenomenon of regionalization (Caricom, CIS, EU, Mercosur, NAFTA, ASEAN, TTIP, TPP, etc.). There are currently fourteen significant, largely linked Regional Economic Communities (RECs) throughout Africa. Eight of these organizations—UMA, COMESA, CEN-SAD, EAC, ECCAS, ECOWAS, IGAD, and SADC—have received recognition from the African Union as RECs. Intra-African trade continues to be among the lowest in the world despite all of these institutions that are meant to increase it. Africa continues to be a minor player in global trade; the continent has not yet emerged and integrated. Despite this admission of failure, nations in Africa still hold on to the hope that economic regionalization will save them from failure and enable their economic integration and development. Because of this, the African Union established the African Continental Free Trade Area (AfCFTA). In order to avoid making the same mistakes as the early African regional organizations, this study sets out to emphasize the challenges that AfCFTA must overcome as well as the opportunities that would arise from this enormous continental regionalization.

**Keywords:** Economic Regionalization, Free Trade Area, African Continental Free Trade Area.

# Turkish Foreign Policies in the Horn of Africa: A Case Study of Ethiopia and Somalia (Perspectives from Political Economics)

Kamal Tasiu Abdullahi<sup>1</sup> and Kalid Abdirahman<sup>2</sup>

<sup>1</sup>Department of Economics, Faculty of Economics, Istanbul University

<sup>2</sup>Faculty of Economics, Department of Development Economics, Marmara University

kmlts256@gmail.com

kalidpcdp@gmail.com

**Abstract.** Particularly after 1998, Türkiye's diplomatic and economic relations with African nations have improved. Türkiye's interest in Africa was initially dormant but after 2005, notably, this relationship changed into a more widespread, active, and expanded desire in forging relationships with the continent. The paper assesses Türkiye's connections with the continent from a political economics perspective. Emphasis is placed on the Horn of Africa with a focus on Ethiopia and Somalia. In order to properly assess the strengths and limitations of Turkish foreign policy toward Africa, various policies implemented by other nations, including the USA and China, are discussed and contrasted with Turkish international policy. The Turkish diplomatic and economic policies—which are carried out to forge links with Ethiopia and Somalia—are utilized as a case study to assess the advantages and disadvantages of the current approach used in the continent. In light of these analyses, the paper's ultimate goal is to identify the best practices in policy and, as a result, to offer advice to Turkish foreign policy decision-makers.

**Keywords:** Aid, Culture, Diplomacy, Political economy, soft power

# Impact of Niger Delta Crisis and National Security in Nigeria: Appraisal of the Amnesty Programme Granted

Kamal Tasiu Abdullahi<sup>1</sup> and Bashir Dan-Inna<sup>2</sup>

<sup>1</sup> Department of Economics, Faculty of Economics, Istanbul University

<sup>2</sup> Department of Economics, Ibn Haldun University

kmlts256@gmail.com

bashmoh09@gmail.com

**Abstract.** The fragility of the nation's take-off, as the historical antecedent, created Nigeria's socio-economic, cultural and political woes. The Nigerian historical developments are better explained by the adage that says "when a fowl perches on the rope, it and the rope automatically become unsettled." This largely remains so till this moment in Nigeria's history as the various events portend particularly in the Niger Delta region. The character and attitude of the Federal Government to the agitation in the region is well known and documented. The use of force to keep the people down and exploit their oil and gas resources could not resolve the crises. In spite of the fact that we now have a 'stable' and 'fraudulent' democratic government in place, the country is yet to be freed from disturbing socio-economic, cultural and political developments. Today, it is innocuous to state that Nigeria is still without a properly consolidated political system. It is a known fact that with the proclamation of the amnesty there seems to be relative peace and national security have since returned to the region. However, the Federal Government is still trying to restore peace in some places with the aim of restoring peace and safety of the nation's economy.

**Keywords:** Niger Delta Crisis, National Security, Nigeria, Amnesty Programme.

# Gross Domestic Product and The Progress of Economic Growth in Kosovo

Agim Berisha

Business College, Faculty of Economics, Pristina-Kosovo

agim.berisha74@hotmail.com

**Abstract.** After the last war, Kosovo continues to remain among the countries with a low level of development and a high rate of unemployment. The low level of economic growth and the high rate of unemployment remain among the main economic challenges for solution, in this direction the government through the instruments of economic policy, separately the fiscal policy should be oriented in order to create the most favorable environment through alleviating measures towards the sector private. In the framework of the work, the main objective consists in the analysis of the progress of the Gross Domestic Product and the economic growth in Kosovo in recent years, as well as the importance of the fiscal policy in the economic flows. In this study, the progress of the Gross Domestic Product and the economic growth in Kosovo in recent years are analyzed, where the conclusions and recommendations are given, so that through the instruments and measures of the fiscal policy, a more favorable environment is created for the promotion of economic activity and economic growth in place.

**Keywords:** Gross Domestic Product, Economic growth, Fiscal policy, Private sector.

# Changing Consumer Behavior as a Result of Influencer Marketing

Hamëz Rama

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

hamez.rama@ubt-uni.net  
hamezrama@hotmail.com

**Abstract.** The third millennium was preceded by rapid technical-technological development, namely information technology and the Internet, through which the factors of the external environment have also changed which have drastically influenced the changes in consumer behavior. The market as such has a very heterogeneous and dispersed character, therefore, the world is dominated by hyper-competition, as products and services are becoming increasingly personalized. The development, transformation and very large use of social networks by the general society has pushed marketers to develop and apply a new concept of marketing which is influencer marketing. The very large use of social networks by individuals, such as: Facebook, TikTok, Twitter, YouTube, Snapchat, Instagram, etc., have also changed the way of communication and decision-making for the purchase of products and services. Therefore, influencer marketing has a very essential impact on the market to consumers. Through this paper, we try to understand how consumers perceive how influential marketing has influenced their behavior in their decision-making for purchasing products and services. Therefore, the main purpose of this paper is to analyze the impact of influencer marketing on Kosovar consumer behavior.

**Keywords:** influencer marketing, consumer behavior, social networks, influencers

# Lagrangian Statistical Management of Inequality Constraints

Shaqir Elezaj and Ramë Elezaj

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

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

**Abstract.** In the application of multipliers according to Lagrange, it is important to note that the Lagrange in question enables us not only to determine the optimal value of the objective function, but also that the value of the multiplier also defines the "intensity" of the change of the variable (related variables). In many engineering and economic analyses, such a definition can be of particular importance. Therefore, in a way, the value and sign of the Lagrange multiplier defines the "behavior" of the profit function in terms of increasing and decreasing the profit function. It should also be determined that the Lagrange with multidimensional Lagrange factors adequately completes the engineering-economic analysis.

**Keywords:** Lagrange with multidimensional Lagrange multipliers. Optimal model, Objective function, Managerial- statistical analysis

# Green Economy Induces Energy Crisis Case: Europe

Ardian Uka and Erzana Uka

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

2 Management Partners and Consulting, Prishtina Kosovo

ardian.uka@ubt-uni.net

**Abstract.** The green economy is a rapidly growing sector that has the potential to drive sustainable economic growth and development. However, the growth of the green economy can also have unintended consequences, including exacerbating existing energy crises. This study focuses on the relationship between the green economy and energy crisis in Europe, exploring the impact of the green economy on energy supply and demand and the ways in which it exacerbates energy crises. The study will utilize a combination of primary and secondary data sources, including government reports, academic studies, and expert interviews, to gather information on the green economy and energy crisis in Europe. The data will be analysed using a range of statistical and econometric techniques to identify patterns and relationships between the green economy and energy crisis. The findings of this study will provide valuable insights into the interplay between the green economy and energy crisis and will inform policy discussions around the development of sustainable energy systems. The results of this study will also be of interest to business leaders and investors in the green economy, as they consider the potential risks and opportunities associated with the growth of this sector. Additionally, the findings of this study will be of interest to policymakers, as they develop strategies to promote sustainable economic growth while addressing energy security concerns.

**Keywords:** green economy, energy, energy crisis, demand, supply, price.

# Processes digitalization: need or necessity to enhance the innovation? (Case study Republic of Kosovo)

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

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

<sup>2</sup>University Haxhi Zeka, Pejë, Republic of Kosovo

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

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

**Abstract.** Innovation – the most preferred word from business but also the hardest work to implement properly. Business challenged every day from different issues, regarding the implementation of manual processes developed in the past. From past ten years, huge process digitalization have been implement in different sectors. The worldwide companies took this opportunity to invest and increase the employee’s productivity and to reduce as much as was possible manual processes. The main challenges was the development and implementation phase, even that the most of the team were sceptic for the results. Studies shown that after the test phase the perception of process digitalization were changed in the stage that teams believe more in digital rather than manual, even today. Based on the research conducted in Republic of Kosovo, in retail business, we found out that lack of investment have been done in this direction. Most of the processes are manual and requires to implement in daily basis, but non useful control strategy (isevident), have record a huge number of complaints by consumers. With this study, the aim is to identify main departments that can switch in digital process, and the company can benefit, not only in productivity but also by generating real time reports and data.

**Keywords:** Innovation, entrepreneurship, business performance, process digitalization



# The Importance of the Adoption and Application of Accounting Policies Transition Countries with Regard to Companies in Kosova

Driton Fetahu

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

driton.fetahu@ubt-uni.net

**Abstract.** Accounting policy should be seen as a framework within which policy is formed to keep business events with the primary objective of increasing safety, especially financial reporting of management. Some management companies is who is responsible for the end result of the economic activity of enterprises run by. To be able to reliably managed by the company shall have a built in system management and logging of all activity in the company, it is necessary to respect the recommendations of the internal control and audit and external audit recommendations. The accounting policy is closely related to the implementation of IAS/IFRS, which are more practical use in the Republic of Kosova starting from 2000/01 Greater application of these standards, companies must make changes to the accounting policies as it begins to implement the increasing number of requirements of the standard in the field of increase of caution, especially in the context of recognition and accreditation. Practically the back door is introduced replacing "the concept of historical cost" (caution), "the concept of fair value" (neutrality). The emergence of large financial and global crisis of 2008, a growing number of actors want to be informed through the financial statements of the real and the real situation in the companies, which are trying to raise the level of protection above all creditors and investors. Also in the first half of 2013, and the state wants to ensure protection management in the public sector and imposes solutions obligatory presence of Internal Auditors of the public sector in public enterprises.

adoption has taken place and show the concerns that banks and regulators have in this "gold rush" era.

**Keywords:** Management, Value, Money Means, Risk, Financial Situation.

# The Role of Vocational Education and Training in Bridging the SkillsGap in the Labour Market

Kujtim Zylfijaj and Mentor Shaqiri

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

kujtim.zylfijaj@ubt-uni.net  
mentor.shaqiri@ubt-uni.net

**Abstract.** Vocational Education and Training plays a vital role in nurturing human capital and addressing the skills gap. Kosovo faces a high youth unemployment rate and a shortage of skilled employees in firms, indicating an education-to-labor market mismatch. This research explores Vocational Education and Training schools' potential in facilitating youth transition to employment through qualitative interviews with school coordinators across Kosovo. Despite Vocational Education and Training schools having a great potential for bridging the skills gap, they face barriers such as curriculum-labor market misalignment, limited business cooperation affecting dual education, low student motivation, and limited public awareness about Vocational Education and Training 's role in youth employability.

**Keywords:** Vocational Education and Training, skills, youth, employment, labour market

# Personality Traits and Predispositions for Criminal Behavior

Haris Muminovic and Fatime Ziberi

International Balkan University, North Macedonia

f.ziberi@ibu.edu.mk

**Abstract.** It is known fact that criminal behavior in most cases has the sources from personal experience and personality traits of individual. Psychological literature offers us a series of arguments and researches that find positive correlation between certain personality types and traits and tendencies for criminal behaviors. This correlation in most cases is expected and reasonable when we take in account the complex nature of the individual and sometimes the difficulty to understand why some criminal acts, as simply as they seem predictable, continue to be committed. In other side, the legal literature and practice, it mostly focuses on the nature of the crime and the punitive legal measures for the same. The aim of this paper is through theoretical review to examine the relationship between personality traits and criminal behavior through a multi-disciplinary approach by answering the questions which personality traits can give us more indications and is more predisposed to criminal behavior? Taylor (2016), offers a balanced perspective on crime, criminal behavior and criminality, emphasizing that answering the question of why and how certain individuals are drawn towards behaving in a way that contravenes the "Law of the Land" it's not an easy task (reported by American Psychological Association, 2023). Another important point of view is the non-acceptance, misuse of these personality traits in front of justice. What is right and what is not in such cases? What crimes and cases are exempt from justice and what tendencies do we have to be misused? This kind of questions requires the skills and knowledge of many experts from both psychological and legal field. Where is the red line that should not be crossed by both sides? We should not forget that personality traits are not mental states or disorders for which we believe and assume that have a different treatment and nature, both before the law and mental health experts.

**Keywords:** personality traits, criminal behavior, psychological approach, legal approach

# Marketing Evaluation from Traditional to Contemporary Methods at Dokufest

Hamëz Rama and Sezen Xhara

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

hamez.rama@ubt-uni.net

sezanexhara@gmail.com

**Abstract.** Marketing is one of the key pillars in the organization which ensures sustainability and longevity, applies traditional concepts and methods to the most contemporary ones. To make sure that if the results are achieved, then it must use evaluation systems and effective tools to ensure the performance and safe development of the organization. The product and service chain system is becoming increasingly difficult to manage due to a competitiveness and the functions of the organization which are related by the market research, planning and using the adequate marketing concept, production, policies of distribution and sale of products and services, of the manufacturing, service or NGO. In the last decades, many transformations have been made from traditional marketing to contemporary marketing, or in other words, to marketing 3.0 and 4.0, influenced by external environmental factors. DokuFest is an annual international festival of short documentary film, is held every year in the month of August in the old town of Prizren with a multicultural heritage and diversity. This paper presents the research of the evaluation of the transformation from traditional marketing to contemporary marketing of Dokufest, through which we will understand the impact of Marketing evaluation from the traditional to the contemporary one.

**Keywords:** traditional marketing, contemporary, dokufest, evaluation, communication.

# The Business Environment and the Impact of Foreign Direct Investments on Economic Growth in Kosovo

Getoar Lubeniqi and Kestrim Avdimetaj

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

getoar.lubeniqi@ubt-uni.net  
kestrim.avdimetaj@ubt-uni.net

**Abstract.** The environment for doing business and attracting investments is important for every economy of different countries, especially for countries in transition such as Kosovo. Therefore, the purpose of this study is to examine the environment of doing business in Kosovo and the main factors influencing the attraction of Foreign Direct Investments (FDI). This study will further identify what is the current position of doing business in Kosovo in relation to previous years, will analyze the favorable factors that influence the attraction of investments and will examine what practices Kosovo should adapt to improve the business environment and investment attraction. In order to support the hypotheses and to test whether foreign direct investments affect economic development, several methods have been applied in this study such as: empirical, statistical and comparative methods. The findings of this study show that the Institutions of Kosovo have dynamically undertaken institutional reform initiatives to improve the business environment, but there are still a number of challenges that Kosovo must overcome. The findings of the study also show that foreign direct investments have an important role in economic growth.

**Keywords:** Kosovo, Economic growth, Business environment, Foreign Direct Investment

# The Moderating Impact of Stages of Development on Entrepreneurship-Economic Growth Relationship

Ermal Lubishtani

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

elubishtani@ubt-uni.net

**Abstract.** This paper investigates how a country's stage of development influences the relationship between entrepreneurial activity and economic growth. Recognizing that entrepreneurial effects differ across developmental stages, we distinguish between innovation-driven and efficiency-driven economies and OECD/non-OECD membership. Although these categories share similarities, subtle variations exist, imposing their separation. Dummy variables are introduced to control for these differences and to examine how the stage of development and OECD affiliation moderate the relationship between entrepreneurship and economic growth. To add a layer of complexity, we include GDP per capita interactions with our main variables of interest. Employment growth and new product innovations serve as key indicators. This study enhances our understanding of the intricate relationship between entrepreneurial activities, economic growth, and a country's development stage, offering insights valuable for policymakers adapting strategies to the needs of diverse economic environments.

**Keywords:** entrepreneurship, innovation; stage of development, economic growth, policymaking

# The Relationship Between Economic Freedom and Economic Growth in Turkiye

Mustafa Serdar ACAR <sup>1</sup><sub>[0000-0002-9986-6749]</sub> and Haldun SOYDAL <sup>2</sup><sub>[0000-0001-6979-0256]</sub>

<sup>1</sup> Selcuk University, Konya, Turkiye

<sup>2</sup> Selcuk University, Konya, Turkiye

mustafaserdar.acar@selcuk.edu.tr

hsoydal@secluk.tr

**Abstract** The economic freedoms (EF) and economic growth (EG) values of the countries are important for the country's economies. The economic freedom levels of the countries also have important effects on the investments to be made in the country. The economic freedom index consists of twelve sub-indices. The concept of economic growth, on the other hand, refers to the change in the country's production of goods and services and the income obtained from production compared to a period before. The economic freedom index is calculated annually, and the economic growth value is calculated annually or quarterly. In this study, it is aimed to investigate the relationship between economic freedom and economic growth variables in Turkey for the period 1995-2022. The relationship between the variables was analyzed with the help of ARDL test. As a result of the analysis, it was determined that the coefficient value of the relationship between the variables is meaningless in the long run.

**Keywords:** Economic Freedom, Economic Growth, ARDL

# Examining the Relationship between Exchange Rate and Housing Salesto Foreigners in Turkiye

Haldun SOYDAL <sup>1</sup>[0000-0001-6979-0256] and Mustafa Serdar ACAR <sup>2</sup>[0000-0002-9986-6749]

<sup>1</sup> Selcuk University, Konya, Turkiye

<sup>2</sup> Selcuk University, Konya, Turkiye

mustafaserdar.acar@selcuk.edu.tr

hsoydal@secluk.tr

**Abstract.** Exchange rate is important for national economies. The exchange rate also affects the foreign investors' decision to invest in the country. A high exchange rate will increase the purchasing power of foreigners, while a low exchange rate will reduce the purchasing power of foreigners. The exchange rate is also effective in the purchase of housing by foreign investors in the country. The increase in the exchange rate (the depreciation of the national currency) increases the purchasing power of foreign investors and enables them to buy more goods and services. In the study, the effect of exchange rate on foreigners' housing purchases is examined. The variables of exchange rate (ER) and the amount of housing purchased by foreigners (HS) for the period of 2013 January-2023 May in Turkey were analyzed with the help of VAR model and Granger causality tests. Result of the analysis, the cointegration between the variables and the causality from the exchange rate variable to the variable of the amount of housing purchased by foreigners were determined.

**Keywords:** Exchange Rate, Housing Sales, VAR model



# The effect of costs on profit maximization

Artan Haziri

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

artan.hazir@ubt-uni.net

**Abstract.** In general, today in the world market and in our country, businesses have begun to pursue or have as their goal the maximization of profit, but they try to achieve this with an efficient use of the costs they have, depending on the nature of the jobs the firms have, are they manufacturing or service ones. In their daily life, people are faced with many problems, so in an effort to find their solution they collect facts, organize them, derive answers and develop methods to find solutions to the problems they have regardless of whether it is requested by the individual, the owner of the firm or even the state itself. Therefore, the decision-making by a firm to determine the amount of production or service dedicated to the market depends to a large extent on the costs and the price of the product or service that that firm produces and sells in the market. Therefore, an important factor that determines the size of the company's profit is the cost of the product or service produced. They appear in every company, regardless of the activity or the activity it develops. The main objective of a firm is profit maximization, while costs are an important influencing factor in achieving profit maximization. The problem of a business is to maximize profit by choosing optimal quantities of inputs to employ and optimal quantities of output to produce.

In addition to the analysis of production costs, which are of special importance, when making managerial decisions, the business must also take into account opportunity costs as well as an important category of costs such as transaction costs, e.g. the costs of negotiating the price according to which the input will be purchased, payments for legal assistance, reaching agreements when concluding contracts, workers' payments, loan payments if any, etc.

The business should also pay attention to the design of policies for cost minimization because the minimization of costs simultaneously enables the realization of the objective of profit maximization. This there will be two approaches to cost analysis: the problem of minimizing the cost of producing to a given level of product and then the problem of choosing the most profitable level of product. In the second approach, two methods are important for the analysis of profit maximization, such as the method of maximizing the difference between total revenue and total costs and the method of maximizing profit according to the condition, marginal revenue equal to marginal cost, but the focus in this paper it will be more in the first method.

**Keywords:** Profit maximization, Cost minimization, Opportunity costs, Transaction costs, Product costs.

# The Importance of Implementing IFRS in the Reporting of Assets of Kosovo Businesses

Albesa Biraj and Artan Haziri

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

artan.haziri@ubt-uni.net

**Abstract.** According to the International Accounting Standards Board (IASB), the purpose and importance of financial reporting is to provide information about the financial position, performance and changes in the financial condition of an enterprise that is useful to a wide range of users in taking economic decisions. Financial reporting is important because it helps to ensure that companies and organizations are acting in accordance with relevant laws and, show to investors the current financial condition of a company. Investors use this data to make investment decisions. Financial reporting contains reliable and relevant information that is used by interested parties for different purposes. Knowing that International Financial Reporting Standards are rules and guidelines that show how information is reported by a business entity, then in this paper the main goal is how important these standards are in reporting assets and whether they are applied to businesses in Kosovo. In this paper, we also studied that the standards in the previous years were less implemented, but from year to year there was a significant increase in improvement. International Financial Reporting Standards in asset reporting have a very important role as they positively affect business transparency and increase the business credibility. Likewise, the implementers of the International Financial Reporting Standards in the reporting of assets have also encountered challenges during the implementation process due to various negligences, but in recent years, a process of professionalism in Kosovar businesses can be clearly seen.

**Keywords:** Financial reporting, international financial reporting standards, financial situation.

# The Role of Organizational Culture in Employee Retention in Kosovar Businesses

Mimoza Sylejmani

University of Maribor, Faculty of Organizational Science, Slovenia

mimoza.sylejmani@student.um.si

**Abstract. Introduction:** Organizational culture is a key component in creating a conducive work environment and influences how employees feel in the organization and whether they remain employed. For this reason, it is crucial to understand how organizational culture is influenced by various factors and how it affects employee retention and engagement.

**Aim:** The primary aim of this research is to explain how organizational culture influences employee retention in different organizations. We developed a careful methodology to achieve this objective and used surveys to collect and analyze data.

**Methodology:** The research was based on a mixed methodology, including a review of existing literature, processing of data collected through surveys, and statistical analysis of this data. The survey was distributed to a representative sample of employees in various organizations. For statistical analysis, regression and correlation analysis methods were used to understand the relationship between elements of organizational culture and the level of employee retention.

**Statistics:** The results of this research revealed a significant link between factors of organizational culture and the level of employee retention. These factors included the values of organizational culture, transparency in organizational communication, and the influence of leaders on the organization's culture.

**Scientific Impact:** This study offers a significant contribution to the literature on human resource management and organizational culture management. Understanding the deep-seated relationships between organizational culture and employee retention will help organizations develop more effective strategies to enhance job satisfaction and employee retention. This research can serve as an important resource for guiding HR management practices in the future.

**Keywords:** Organizational culture, employee retention, business environment, strategy, Kosovar businesses

# Effects of using the Win-Loss Method for overcoming conflicts in organization

Arsim Marmullaku and Bekim Marmullaku

UBT – Higher Education Institution, Pristina 10000, Kosovo

arsim@t-online.de  
bekim.marmullaku@ubt-uni.net

**Abstract.** Conflict is a phenomenon that is present both in society and in organizations. Managers spend part of their time in conflict situations and trying to resolve conflicts. Business development under conditions of competition and pressure from the external environment in the global market and the continuous struggle in this sphere, requires from managers skills, knowledge, resistance, but also confrontation with conflicting situations, which they must manage and resolve in right there and then. In this research is used a quantitative approach and the data are collected through questionnaires made from a sample based on the characteristics of organizations and employee leaders. 340 leaders of organizations were surveyed and the case study are taken from Kosovo businesses. It presents descriptive data analysis and the empirical findings shows that the negative effects of conflict and that affect work performance. The findings also show that the use of a Win-Loss strategy model is still applicable in conflict management, while employees' awareness of the factors that cause conflict significantly affects work performance.

**Keywords:** Conflict Management, Win – Loss Method, Effects, Strategy.

# How Can Blockchain Technology Contribute to Risk Management in International Trade?

Metehan ORTAKARPUZ

Selcuk University, Beysehri A.A. Business Faculty International Trade & Business Department

mortakarpuz@selcuk.edu.tr

**Abstract.** The fact that the parties are beyond borders in international trade, they do not know each other well enough, the different political and economic conditions and systems of countries, long distances, varied commercial traditions, conjunctural factors make international trade more risky than domestic trade. Legal legislation in terms of the rights and obligations of the parties, foreign exchange transactions due to the use of foreign currency, transportation and insurance in terms of transportation activities, accounting and financial transactions in terms of determining the effect on businesses and the country's economy, the policies followed, the content of the contracts drawn up and the procedures diversify the risks. These risks are manifested as obstacles that hinder the functioning and development of commercial activities and thus reduce their efficiency. In this context, reducing or eliminating obstacles such as bureaucracy, complexity, non-transparent processes and country policies will facilitate access to new markets and strengthen the supply chain. Today, the fact that blockchain technology contributes to operations by revolutionizing business processes in various industries shows that it also has the potential to alleviate the problems associated with cross-border trade. With the integration and development of blockchain applications in many areas of use in international trade, it is possible to overcome many obstacles that arise within the framework of the risks in this area. This study was written to investigate in which areas blockchain technology can be used in international trade and to what extent it can provide solutions against classified risks for these areas. In the study, a multifaceted examination is made to develop the foreseen and planned strategic elements regarding risk management in international trade by using blockchain technology.

**Keywords:** Blockchain, International Trade, Risk Management

# The Moderating Effect of Access to Finance on the Relationship between Gender and Export Propensity

Arta Mulliqi

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

arta.mulliqi@ubt-uni.net

**Abstract.** Based on a sample of more than 13,000 firms from the transition region, this research paper investigates the linkages between the gender of the top manager, access to finance, and a firm's propensity to participate in international markets through exporting. Controlling for firm and sector characteristics, a series of empirical analyses are conducted to assess whether firms led by women are less likely to engage in exporting activities than those led by men. The potential moderating effect of access to finance on this nexus is also tested. The estimated results reveal that, firms run by women exhibit a lower probability to export compared to those run by men. However, this pattern shifts when the moderating effect of access to finance is taken into account. In particular, the propensity to export for firms managed by women increases significantly upon gaining access to external finance. The obtained evidence suggests policy actions that could support and facilitate access to finance for women entrepreneurs, thereby increasing their engagement in international markets.

**Keywords:** Gender gap, external finance, export propensity.

# The Effect of Artificial Intelligence in Marketing

Gonxhe Beqiri<sup>1</sup> and Rajan Arapi<sup>2</sup>

<sup>1,2</sup> UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtina, Kosovo

<sup>3</sup> Faculty of Zinc Galvanism, Prizren,

gonxhe.beqiri@ubt-uni.net

rajan.arapi@ubt-uni.net

**Abstract.** For less than a decade marketing has undergone through a big transformation because of digital technology, therefore Artificial Intelligence (AI) represents a unique aspect how marketing of different brands has evolved. Brand identity and formation has been affected by AI, especially the targeting process has taken a different transformation and digital marketing channel has been affected the most. This paper aims to analyze how artificial intelligence has affected marketing of different worldwide brands, how they are using AI, which are the advantages and disadvantages of AI in Marketing in general. Since the topic is quite recent in scientific and academic world, this paper uses secondary data analysis from various reliable reports and from most recent scientific articles. Mainly the article will be focused on data analysis regarding specific countries and will use comparative analysis. The paper concludes that Artificial Intelligence has affected the brand value and brand awareness, various companies are using AI to fulfill specific customer needs and to create more valuable customer relationship management. A specific aspect is the data analysis process, moreover some companies are skeptical about using artificial intelligence in their marketing strategy because of data privacy and security, some are simply yet not informed how to use AI in general.

**Keywords:** Artificial Intelligence, marketing, brands, data, targeting, customer

# Lean Six Sigma and SMEs: Systematic Literature Review

Engelbert Zefaj

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

engelbert.zefaj@ubt-uni.net

**Abstract.** The concept of ‘Lean Six Sigma’ as an integrated strategy is still in development: since its inception in 2000, a number of academics have developed an integrated approach, while others have focused on a framework for the successful integration of Lean and Six Sigma (Laureani, A. & Antony, J., 2019). The purpose of this research is to consolidate existing knowledge on the application of Lean Six Sigma in Small and Medium-sized Enterprise’s (SMEs), providing a starting point for researchers and practitioners seeking to implement Lean Six Sigma in Enterprises while providing suggestions for future research. A systematic review of the literature related to LSS and Enterprises was conducted in order to collect, analyze and synthesize useful knowledge about LSS and Enterprise. The findings of the research show that LSS is a widely used methodology and has marked significant successes in those Enterprises where it has been applied responsibly. As also say in their study Albliwi et al., (2015), Lean and Six Sigma has become one of the most popular business strategies for establishing continuous improvements in production, services and public service organizations

**Keywords:** Lean Six Sigma, SME, Systematic Literature Review



# **The Impact of Digitalization on Existing Gaps in Reliability and Independence of Financial Statements a Study Of The Corporates in Kosovo**

Blinera Sylejmani

blinerasylejmani1992@gmail.com

**Abstract.** The business environment is changing faster than ever, with technology disruptions and recreating the way companies perform basic processes. The aim of this qualitative and exploratory study is to increase the understanding of the effects digitalization has on the tools and working methods in financial statements. This is achieved through 40 semi-structured interviews with some accountant and auditors that works or has worked in the biggest corporates in Kosovo, where emphasis is put on interpretation. This paper describes what digitization means and how it is perceived, what is the effect of the work of accountant and auditors, what will be the impact it will have in the future in financial statements. Conclusions drawn are that the effect on the accountants and auditors' working methods are more prominent than on the tools, due to paperless working methods and increased flexibility. Unlike previous research, this study also discovers an increasing effect which is the digital transformation of processes that consists in adapting the company's processes to the new digital environment. Thereby, education is underlined as important among accountants and auditors, where corporates have to develop available education to the new competence needed.

**Keywords:** Effects, Digitalization, Tools, Working methods, Financial Statement

# Green Tourism and its Impact in Environmental Development

Arta Kadriu [0000-0003-1410-9587]

University of Tetova, Tetovo, North Macedonia

arta.kadriu@unite.edu.mk

**Abstract.** Green tourism is one of the newest types of tourism industry development. This type is very important as it is closely related to the natural potential that a tourist destination offers, it is also related to economic development and environmental protection, tourist culture, climate change as well as migration and population growth. Green tourism is the main pillar of the development of sustainable tourism, therefore in this scientific paper we will present the development methods and the effects during the use of these methods for the improvement and promotion of green tourism, also during the research we also have used the methods that affect the improvement of the living environment and economic development based on green tourism. Through this we present the real possibilities of developing green tourism in Sharr Mountain, as a national park and we also focus on the tourist center Kodra e Diellit. From all this we will conclude that the development of new types of tourism industry always aims at the utilization of natural potential taking into account the preservation of the living environment.

**Keywords:** green tourism, environment, economic development, climate change.

# Do we have enough information for e-commerce online security?

Afërina Skeja <sup>1[0000-0001-9042-7910]</sup> and Gonxhe Beqiri <sup>1[0000-0003-3381-6391]</sup>

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

aferina.skeja@ubt-uni.net

gonxhe.beqiri@ubt-uni.net

**Abstract:** As the global population continues to grow, changes and digital transformations are taking place in all economies. The accelerated pace of digital transformation across various sectors is heightening users' interest in and inclination toward digitization. Moreover, the rising number of users of all ages and genders is influencing the development of digital maturity levels and digitization itself. The surge in internet and mobile phone usage, investment trends, and the growing user and business base have given rise to the concept of e-commerce, which stands out as one of the most tangible outcomes of digitization. Consequently, the commerce that has transitioned to the digital realm is now referred to as e-commerce, offering numerous advantages. This transition has opened up new strategic opportunities, particularly for both managers and consumers. The rapid and continuous evolution of e-commerce can be attributed to the increasing use of the internet, the widespread adoption of mobile phones, investment trends, and the digitization of users and businesses. This swift development and usage growth raise questions about our awareness of online security and the extent to which it may hinder e-commerce. Therefore, the aim of this research is to investigate the knowledge, attitudes, and behaviors concerning online security in e-commerce, as perceived by both managers and consumers.

**Keywords:** E-commerce, Online security, Online payment, Electronic payment.

# Impact of Entrepreneurship in Reducing Unemployment

Enver Krasniqi and Akile Lipovica

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

enver.krasniqi@ubt-uni.net

**Abstract:** This paper explores the potential of entrepreneurship as a sustainable solution to the ongoing challenge of unemployment. Unemployment is a widespread issue affecting individuals, communities and nations around the globe. The traditional approach to combating unemployment has often centered on job creation through government initiatives and private sector expansion. However, in recent years, there has been growing recognition of an alternative solution that taps into individual potential and fosters self-reliance in entrepreneurship. With rising global unemployment rates and limited employment opportunities, fostering entrepreneurship can empower individuals to create their own economic opportunities and contribute to long-term economic growth. This paper examines the benefits, challenges and key considerations associated with promoting entrepreneurship as a sustainable alternative to traditional employment. By analyzing existing literature and real-world case studies, this abstract highlights the potential of entrepreneurship to address unemployment at both the individual and societal levels. It highlights the role of entrepreneurial education, access to capital and supportive ecosystems in facilitating entrepreneurship as a long-term solution. Additionally, it investigates the implications for policy makers, business leaders and society at large in fostering an entrepreneurial culture that fosters innovation, job creation and economic sustainability. The findings suggest that a comprehensive approach that integrates education, mentoring and policy support can help unlock the potential of entrepreneurship, not only in reducing unemployment, but also in fostering a sustainable and inclusive economy. This research concludes with key recommendations and areas for further research to optimize the implementation of entrepreneurship as a sustainable long-term solution for the unemployed.

**Keywords:** impact, entrepreneurship, unemployment, economic growth, innovation.

# The Impact of Uncertain Times in Supply Chain Management

Ylber Limani and Mergime Sylja

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

ylber.limani, ms37370{@ubt-uni.net}

**Abstract:** This paper examines the effects of uncertain times on supply chain management, with a focus on four main factors causing uncertainty. Pandemics, political instabilities, environmental changes, and financial crises are the main factors examined initially throughout the literature review. In a second phase, the research is focused on the quantitative approach by carrying out a survey of local businesses with the aim of analyzing the degree of influence of each factor in the management of the supply chain. Last two decades continents and nations have grappled with the unexpected effects of financial crises, pandemics, environmental issues, and political changes, manufacturing and service-providing enterprises operating across the globe have faced countless challenges in managing supply chains. It is assumed that uncertain factors producing uncertain times directly or indirectly affect the overall performance of the supply chain operation. In this paper, we constructed an analysis of supply chain challenges during uncertain times and explored the relationship between uncertain times and effective supply chain management.

**Keywords:** financial crises, political instability, pandemics, environmental issues, supply chains.

# The Impact of Green Public Procurement in Western Balkan Countries

Ditjona KULE and Irisi BELERAJ

Department of Economics, Faculty of Economy

ditjona.kule@unitir.edu.al

irisi.beleraj@unitir.edu.al

**Abstract.** The sensitivity to environmental preservation toward ethical and sustainable economic growth has been at an all-time high in recent decades. Green public procurement (GPP) is a procedure in which public entities, such as governments or municipalities, purchase goods and services that have a lower environmental effect than conventional alternatives. GPP is gaining popularity in the Western Balkans as a strategy for promoting sustainable development and addressing environmental issues. The demand for recyclable products, energy-efficient systems, clean technology and fuels, is driving the adoption of ecologically responsible business practices. Private consumers are also encouraged to focus on green purchases. Considering that European public institutions consume 1.8 trillion euros per year (14% of European GDP), their involvement in a constant process of purchasing goods and services with low environmental impact can decisively influence sustainable development in Europe and stimulate eco-innovation. In this article, we will examine the adjustments that Western Balkan enterprises must adopt in order to take advantage of the possibilities of Green Public Procurement, as well as their capacity to do so. One of the important points that will be examined in this article is related to the innovation of the procurement process, taking international best practices that can be adapted to the characteristics of the countries of the Western Balkans, as well as to the innovative processes that these countries can compose and promote.

**Keywords:** Green Public Procurement, Western Balkan region, government, Innovation, impact, benefits.

# Drivers of Green Innovations in Western Balkan Countries

Aida GJIKA and Etis JORGJI

Faculty of Economy, University of Tirana, Albania

aida.gjika@unitir.edu.al

etis.jorgji@unitir.edu.al

**Abstract.** The countries of the Western Balkans, both individually and in the regional context, face a series of actual and potential environmental problems and challenges with significant impact on sustainable development. These issues include air pollution, inappropriate water and waste management practices, loss of biodiversity and habitat degradation, climate change and exposure to natural disasters. By addressing environmental problems through the adoption of green innovations, countries in the region can ensure sustainable development while simultaneously conserving their natural resources, protecting ecosystems and improving the well-being of their citizens. The article aims to investigate the key drivers behind the adoption of green innovations in the countries of Western Balkans. Understanding the role of these determinants is crucial in addressing environmental issues, promoting sustainability, and advancing integration into the European Union. Through a critical review of contemporary literature and empirical data analysis, this article identifies the primary political, legal, economic, technological, and social factors that influence the implementation of green innovations in the region. Employing both theoretical and empirical approaches, this study contributes to an understudied field related to green innovations encompassing technologies, practices, and environmentally friendly policies shaped by various interconnected factors in the context of the region. The paper offers significant findings for businesses, policymakers, and other stakeholders interested in fostering green innovations and sustainable development in the region.

**Keywords:** green innovations, drivers, Western Balkans, environment, sustainable development.

# A PEST analysis for Western Balkans towards Green Economy

Aseda Banushaj<sup>1</sup> and Gentian Picari<sup>2</sup>

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

<sup>2</sup>PhD student, Director of Regional Coordination Center at Albanian Development Fund

asedbanushaj@feut.edu.al  
gentianpicari@yahoo.com

**Abstract.** The Green economy refers to an economic system that aims to promote sustainable development, reduce environmental impact, and ensure the efficient use of resources. In the case of the Western Balkans region, there are several key aspects to consider regarding the green economy like renewable energy, energy efficiency, sustainable agriculture, circular economy green Infrastructure, education and research. It is essential for governments, businesses, and civil society in the Western Balkans to collaborate and prioritize the development of policies, incentives, and investments that promote the green economy. Such efforts can not only drive economic growth but also preserve the region's natural resources and contribute to a more sustainable future. The Green Agenda for the Western Balkans has the potential to drive the transition towards a Sustainable, carbon-neutral economy oriented towards planetary health and human well-being. The goal of the Agenda, which comes as part of a 9 billion euro Economic and Investment Plan for Western Balkans, is to stimulate the economies in the Western Balkans by bringing region in accordance with EU environmental standards and climate objectives, reducing corruption and strengthening democracy. The Green Agenda and the Economic Investment Plan must be aligned with the EU's environmental and climate objectives. It should also strengthen environmental protection, it should also improve vulnerable groups and contribute to tackling the root causes of inequality. In particular, it focuses on women, the young and the elderly, low-income and rural groups. The region has shown a poor record in implementing the EU environmental acquis and state aid legislation, even under binding instruments such as the Energy Community Treaty. We therefore emphasize that the Green Agenda in its current format lacks sufficient emphasis on legal enforcement that would ensure its integrity. Through a PEST analysis we will see the political, economic, social, technological constraints and barriers in the countries of the Western Balkans (Albania, Serbia, Bosnia Herzegovina, North Macedonia, Montenegro). At the end of the paper, we will give some recommendations for a better progress in accordance with the objectives of the Green Agenda.

**Keywords:** Green Economy, Green Agenda, Western Balkans, PEST analysis, carbon-neutral economy

**Jel Code:** Q55, Q56, Q57, Q58



# Machine Learning Approaches for Modelling Real Estate Systems

Visar Hoxha<sup>1</sup>, Lorana Berisha<sup>2</sup> and Jehona Hoxha<sup>3</sup>

<sup>1</sup>Faculty of Real Estate University for Business and Technology

<sup>2,3</sup> Department of Real Estate, College ESLG

visar.hoxha@ubt-uni.net

lorana.berisha@eukos.org

jehona.hoxha@eukos.org

**Abstract.** In the intricate domain of real estate, precise property valuation remains paramount for a spectrum of economic endeavors. The 2008 global economic downturn spotlighted the limitations of conventional valuation methods, prompting the exploration of innovative, objective techniques. This paper investigates the incorporation of machine learning in modeling intricate real estate systems. We discuss the evolution from traditional appraisal methods to Automated Valuation Models (AVM) and the subsequent challenges these models face. Drawing from global research and case studies, we highlight the adaptability, accuracy, and potential of machine learning techniques in real estate valuation. Our findings underscore machine learning's transformative role in enhancing property appraisal, offering a forward-looking perspective on the future of real estate valuation.

# Prediction of Housing Prices Using Machine Learning Algorithms

Visar Hoxha<sup>1</sup>, Lorana Berisha<sup>2</sup> and Jehona Hoxha<sup>3</sup>

<sup>1</sup>Faculty of Real Estate University for Business and Technology  
<sup>2,3</sup>Department of Real Estate, College ESLG

visar.hoxha@ubt-uni.net  
lorana.berisha@eukos.org  
jehona.hoxha@eukos.org

**Abstract.** In the evolving landscape of real estate valuation, the integration of machine learning (ML) algorithms has emerged as a transformative approach. This literature review delves into the application of various ML techniques in predicting property prices, comparing their efficacy with traditional methods. Drawing from global research, the study underscores the potential of ML in enhancing accuracy, adaptability, and objectivity in property valuation.

# Using an Advanced Analysis for Forecasting and Daily Exchange Rates

Elmira Kushta<sup>1</sup>, Miftar Ramosacaj<sup>2</sup>, Astrit Denaj<sup>3</sup>

<sup>1,2</sup>Department of Applied Mathematics, Faculty of Technical Sciences, University "Ismail Qemali" Vlore <sup>3</sup>Department of Physics, Faculty of Technical Sciences, University "Ismail Qemali" Vlore.

elmirakushta@univlora.edu.al  
miftar.ramosaco@univlora.edu.al  
astrit.denaj@univlora.edu.al

**Abstract.** In this paper we have taken into account the descriptive analysis for the very long-term behavior of the euro/lek exchange rate.

By analyzing the distribution of the relative change in the daily exchange rate series for the period [2015-2023], we have evidenced a behavior close to the average, which contradicts some econometric arguments and the economic level of the country.

Therefore, consideration of the entire interval for statistical analysis is disqualified.

But in all we observed that the return of the exchange rate of the euro to the national currency has been unstable. This behavior supported the idea that the exchange rate factors have been dominant and have not been identified, so it has shown an almost unsterilized dynamic towards the EU currency. By collecting information about the stationary of states, the presence of regimes and their features, we were able to identify the optimal conditions for measurement, modeling and stable descriptive statistics. Using the decomposition of the empirical method we located the time interval where it aims to reveal the importance for better results in the study in the near future if the general situation remains apparently unchanged.

**Keywords:** exchange rate, time series, stationary, variables.

# Foreign Direct Investment and Business Environment in WesternBalkan Countries

Mustafe Hasani<sup>1</sup> and Blerina Hasani<sup>2</sup>

<sup>1</sup>University for Business and Technology, Pristina, Republic of Kosovomustafe.hasani@ubt-uni.net

<sup>2</sup>University of Ljubljana, School of Economics and Business, Slovenia

**Abstract.** This paper is an attempt to estimate the relationship between FDI inflow and improving the business environment through Ease of Doing Business indicators. The research aims to explore statistically significant linkages between improved of overall WB ranking and inward FDI performed on the sample of six Balkan countries - Albania, Bosnia and Herzegovina, Montenegro, Northern Macedonia, Republic of Kosovo and Serbia. The hypotheses are formulated and basic tests performed on data from using the World Bank's Doing Business official rankings from 2010 to 2020. Furthermore, the study shows that the analyzed countries from the Western Balkans region have managed to achieve appropriate levels of the improvement on regulatory reforms in Ease doing Business, however these countries have not been successful enough in attracting foreign investments.

**Keywords:** FDI. Ease of Doing Business Rankings, Balkan Countries

# The Impact of IT Investments on the Performance of Largest Middle East Banks

Rasha Mahboub and Amir Imeri

UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, Kosovo

Beirut Arab University, Beirut, Lebanon  
r.mahboub@bau.edu.lb;  
amir.imeri@ubt-uni.net

**Abstract.** IT investments lately have taken major role in Middle East banks. Hence, this study is adding to the discussion of impact of IT to the financial performance of ten largest Middle East banks, covering the period 2011- 2021. The main source of the data is from annual reports of each bank. The study uses CAMELS model as dependent variable, whereas IT investments like Automated Teller Machine (ATM), Mobile Banking (MB), Internet Banking (IB), Point of Sale Terminals (POS) and Telephone Banking (TB) are the independent variables. The findings of the study show that the use of ATM, POS and TB has significant impact on financial performance of banks. Hence, the use of MB, IB does not have significant impact on financial performance of Middle East banks. The study concludes with recommendations for future studies.

**Keyword:** IT, Bank Performance, CAMELS, Middle East

# Role and influence of MFIs in Kosovo's socio-economic landscape

Shpresim Vranovci

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

shpresim.vranovci@ubt-uni.net

**Abstract.** Microfinance Institutions (MFIs) have become increasingly important for promoting economic growth, financial inclusion, and access, especially for marginalized households and Micro, Small, and Medium Enterprises (MSMEs). The Association of Microfinance Institutions of Kosovo (AMIK) is a key player in this sector, supporting and representing MFIs operating within Kosovo. To better understand the impact of MFIs on Kosovo's economy, a comprehensive study was conducted examining the sector's historical, current, and potential impact. The study used primary and secondary data to assess the role and influence of MFIs in Kosovo's socio-economic landscape, focusing on the clients of seven MFIs affiliated with AMIK. Desk research, quantitative surveys, and semi-structured interviews with key stakeholders were used to gain insights into the sector's performance and influence. The study's findings are essential for assessing the sector's contribution to economic growth, proposing strategies for reform, and guiding future research on the role and impact of MFIs in Kosovo and similar contexts.

**JEL Classification:** G21, E24, I39,

# Enhancing Management Focus Toward Market Orientation: Unveiling Internal Perspectives within Publicly Owned Enterprises of Republic of Kosovo

Nazmi Zeqiri

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

nazmi.zeqiri@ubt-uni.net

**Abstract.** This study investigates the level of market orientation of Publicly Owned Enterprises (POE-s) operating in monopolistic markets, with a specific emphasis on the internal perspectives of management and employees. Despite external criticisms concerning the organization's low market orientation level, attributed to its monopoly position, little attention has been given to understanding how employees perceive this orientation within their organizations. A questionnaire survey was administered to 211 employees to gain insights into their perspectives. The findings shed light on the state of organizational communication, both internally and externally. Internally, the study reveals a lack of employee involvement and departmental coordination in addressing customers' needs and demands. Externally, there is a lack of investment in analysing and understanding customers' requirements. These findings highlight the challenges faced by these organizations in transitioning from a monopolistic organizational culture to an open market environment that prioritizes time-to-market, flexibility, responsiveness, innovation, and customer-centricity. The study emphasizes the need for these organizations to effectively manage this transition and cultivate a market-oriented mindset throughout their operations. By promoting greater internal collaboration, strategic analysis of customer needs, and responsiveness to market demands, these organizations can better position themselves for success in an increasingly competitive landscape.

**Keywords:** Market Orientation, Employee, Public Sector

# HOW FAR CAN BRICS GO?

Plamen Iliev

New Bulgarian University-Department "Economics" Sofia

kaviplas@abv.bg

pkiliev@nbu.bg

**Abstract.** In a 2009 report, Goldman Sachs, one of the oldest investment banks in the world, founded in 1869 in the United States, and looking at opportunities for economic development and growth in Brazil, Russia, India and China, for the first time mentions BRIC, as an acronym of the first letters of these countries. In 2010, they were joined by South Africa and BRICS was obtained. This newly created union, group or bloc now covers over 40% of the world's population and over 25% of the world's economy. About a month ago, BRICS took a new course of development, accepting six new countries as members - Saudi Arabia, UAE, Iran, Egypt, Argentina and Ethiopia, thus forming a very solid and powerful economic grouping that could soon oppose of the rich from the G-7 and there is a serious request to regroup the world economy. The same Goldman Sachs predicts that by 2032 the total growth of the BRICS economy may exceed the growth of the richest countries in the world from the G-7, and according to some Russian analysts, the contribution of the BRICS to the total world economic growth already exceeds 50% and is the largest consumer market with a population of about 2.8 billion people. The BRICS group aims to use local currencies in global trade, or create its own currency with the appropriate collateral, to reduce its dependence on the US dollar, thus supporting its individual economies. In particular, the Chinese yuan and the Indian rupee were accepted for cross-border transactions, reducing dependence on the US dollar. This also calls into question the security of the dollar, which with further expansion of BRICS is likely to lead to serious losses for the US currency, as well as a decrease in its influence on a global scale, which already seriously worries the US and threatens its economic and global dominance.

**Keywords:** economy, economic bloc, currency, development and trade



# **Agriculture Development Strategy in the Republic of North Macedonia: Between Subsidies, EU Support and Pressure From Liberalization**

Ruzhdi Matoshi

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

ruzhdi.matoshi@ubt-uni.net

**Abstract.** Agriculture development differs a lot from the rest of economic sectors. While in a market economy the fate of businesses in each sector is decided by competition leading to the entries, survival and growth of the fittest, in agriculture as a whole there are some exceptions as a result of support from the government with subsidies. The main reasoning behind this direct support with the state funds is made on the grounds that food is necessity and there is no alternative to it. Even in global scale, efforts to support agricultural development in various forms. However, contradictions arise between the states about inequalities and dilemmas that arise in the market, mainly between industrially developed countries and emerging economies. A greater pressure falls on developing countries where a large part of the population deals with agriculture to generate employment and incomes that are less worth to buy more expensive industrial goods from developed countries. Trade liberalization of food continues to be criticized not in its essence, but in a part that someone is benefitting at the expense of another depending on how much agricultural products are subsidized. The Republic of Macedonia in the 21<sup>st</sup> century as a developing country, is in transition to transform the agricultural sector from a half-open in international trade, to a more open and liberal sector by a support from inside and outside. As where it is in this process and perspective, the aim of this paper is to make a critical assessment of these supporting measures and find out what would be a better option for agricultural development.

**JEL:** F53, O24, Q18.

# Factors influencing the use of electronic services in Kosovo

Mirjeta Domniku, Mersiha Kalac and Fortesë Qerimi

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

{mirjeta.domniku, mersiha.kalac@unhz.eu , fq383913} ubt-uni.net

**Abstract.** This paper deals with an issue which is very trending recently, the Digitization of businesses in Kosovo and the influencing factors in the use of electronic services by the customers of these businesses. The purpose of this paper is to find out the influencing factors in the use of electronic services in Kosovo, so in order to understand these factors, we analyzed research done for our country by different authors, and also compiled a survey on the use of electronic services (customers), the survey was distributed through social networks, e-mails and direct conversations with individuals. From the obtained results, it appears that electronic services are used sufficiently in our country and these services are also offered by our businesses in our country. Services that are mostly used by customers and offered by businesses are: buying clothes or cosmetics and money transfers. In extracting the results of the surveys, we also analyzed the seven hypotheses which present the connections, differences and influences between factors (lack of time, prices, comfort and personal income) and demographic data (gender, age, level of education, and income personal).

**Keywords:** Digitization, Businesses, Electronic Services, Transformation, Trend

# Understanding the Drivers of Meat Criteria Adoption: An Empirical Analysis

Fidane Spahija Gjokolli and Burim Prenaj

UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, Kosovo

fidane.spahija@ubt-uni.net  
prenajburimi@gmail.com

**Abstract.** The adoption of meat criteria within public contracts is gaining attention as governments and public institutions are increasingly interested in issues related to sustainability. This paper explores the complex dynamics surrounding the adoption of meat criteria in public contracts, seeking to uncover barriers to its adoption. This study employs a comprehensive research framework to examine the key drivers and barriers that shape the integration of meat-related criteria into public procurement practices. Drawing from a rich administrative dataset obtained from Kosovo's e-procurement, it aims to identify the most influential factors. Among these, the paper explores the legislative requirements and policy directives as pivotal drivers of meat criteria adoption, reflecting a broader societal push towards responsible and sustainable sourcing. Moreover, we will also explore the economic considerations, cost implications, and the availability of sustainable meat sources as significant challenges in the adoption of meat criteria. This research has significant implications for public procurement practices and highlights the evolving role of governments in driving positive societal change. By understanding the factors that influence the adoption of meat criteria, policymakers and procurement professionals can make informed decisions that align with broader sustainability goals and address growing concerns related to the environmental and ethical dimensions of meat production. In conclusion, the adoption of meat criteria in public contracts is a nuanced process influenced by a multitude of factors. Understanding and addressing these factors is instrumental in crafting procurement practices that promote sustainability, health, and ethical values, ultimately contributing to a more responsible and conscious approach to public sector purchasing.

**Keywords:** Public Procurement, Meat Criteria, Kosovo.

# Financial inclusion determinants in South-Eastern European Countries

Albulena Jahja

UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, 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

# The Impact of International Trade and Foreign Direct Investment on Economic Growth of Western Balkan Countries

Shkumbin Shahini and Sema Kazazi

UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, Kosovo

ss38788@ubt-uni.net

sema.kazazi@ubt-uni.net

**Abstract.** The aim of this paper is to find the impact of foreign direct investment and international trade on economic growth. In order to obtain that, the 6 countries of the Western Balkans (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia) were included in the analysis for the time period 2008 - 2022. The regression analysis using Fixed Effects Models found all the variables to be statistically significant. During the analyzed period, in these countries foreign direct investments have a negative and statistically significant impact. On the other hand, international trade measured with the indicator of trade openness (total exports and imports as % of GDP) has a positive and statistically significant impact on economic growth. In addition to the two variables from the field of international economics, two additional variables are also included in the model: population and inflation. The population is found to have negative impact on economic growth, statistically significant but with a very low coefficient, while inflation has a positive and statistically significant impact. Since the negative impact of foreign direct investments was found, it is recommended that the policymakers take appropriate measures to improve the situation in the region. It is recommended to ensure that obstacles and barriers to trade are minimized, to ensure favorable conditions for the promotion of foreign direct investments, to create a friendly environment by establishing political and economic stability in the region, and to make efforts towards trade liberalization by applying export-oriented strategies.

**Keywords:** Economic Growth, Foreign Direct Investment, International Trade, Western Balkans, Inflation, Population.

# The Role of Startup Hubs in Catalyzing Entrepreneurial Innovation

Blerina Boshtraj and Hasan Metin

University of Business and Technology, Lagjja Kalabria, 10000 Prishtine, Kosovo

bb36025@ubt-uni.net  
hasan.metin@ubt-uni.net

**Abstract.** In the changing world of startups having the environment and connections can make a significant impact. That's where startup hubs come in; they are the centers where innovation thrives and ideas come to life. These hubs go beyond shared workspaces; they act as catalysts that propel entrepreneurs on their journey. Being surrounded by a mix of minds startups gain access, to invaluable re- sources and insights. It's like giving innovation a boost. On one hand these hubs offer state of the art technology tools and infrastructure that startups might struggle to obtain. On the hand they provide opportunities for networking with like-minded individuals, experienced mentors and potential investors. This constant interaction often leads to product designs, smarter business strategies and fresh perspectives on the market. However, it's not about the benefits. The energy and atmosphere within these hubs inspire startups to push boundaries and think outside the box. This research delves into the core of these hubs exploring their role, in shaping tomorrow's business leaders and driving forward the spirit of innovation.

**Keywords:** Startup Hubs, Entrepreneurial Innovation, Business Ecosystem, Collaboration, Technology Advancements.

# Digitalization of Business Sales Process

Muhamet Avdyli and Ernisë Sallahu

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

muhamet.avdyli@ubt-uni.net  
es48999@ubt-uni.net

**Abstract.** This research work aims to analyze and expand on the topic of digitalization in the business sales process, with a specific focus on the impact of this technological change on business performance. In a time where information and communication technology is constantly advancing, the digitalization of business processes has become a dominant trend that is altering the way businesses operate and deliver their products and services. In this study, we start with the primary objective of understanding how the sales process of businesses is changing and improving with the help of digital technology. To achieve this goal, we aim to identify the interaction between technological changes and business performance in terms of efficiency, productivity, and consumer experience. The use of previous research data and their analysis will assist us in examining how the technological changes incorporated into the sales process can bring about positive changes in how businesses operate. The results of this study are expected to provide a comprehensive overview of the benefits of digitalizing the business sales process. These benefits include increased sales and purchasing process efficiency, cost reduction through technology utilization, and enhanced business competitiveness in the market. Furthermore, we will also address the challenges that may arise during this process of change and provide proposals for effectively tackling them. With a special focus on the impact of digitalizing the business sales process, the aim of this research work is to make a valuable contribution to the field's literature. By expanding our knowledge of the technology's influence, we can contribute to the development of success strategies for businesses in an environment where technology has an ever-growing impact. .

**Keywords:** Digitalization, Business Sales Process, Dominant Trend, Information and Communication Technology, Business Performance, Consumer Experience

# Examining the Impact of Strategic Human Resource Management-SHRM and Organizational Behavior on Digital Transformation Performance in Regional Businesses

Labeat Mustafa<sup>1</sup> and Ludmilla Shkurti<sup>2</sup>

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

<sup>2</sup>WisdomUniversity College, Albania

labeat.mustafa@ubt-uni.net

**Abstract:** This quantitative research study aims to quantitatively assess the influence of strategic human resource management (SHRM) and organizational behavior dynamics on business performance during the era of digital transformation in regional businesses. With a focus on 200 businesses across two states in the region, this study seeks to understand how these variables are perceived by key stakeholders. Utilizing a survey-based approach, the study measures the perceptions of interviewees, including business leaders and employees, regarding the SHRM on strategies implemented within their organizations, the dynamics of organizational behavior they observe, and the resulting business performance during digital transformation. The survey data is analyzed to determine the statistical relationships between these variables. By quantifying these perceptions, the research seeks to provide a rigorous and data-driven understanding of the interplay between SHRM, organizational behavior and business success during digital transformation. The research findings will offer valuable quantitative insights to regional businesses, policymakers, and educators, helping inform evidence-based decision-making in the dynamic digital era. Ethical considerations in the management of human resources and organizational behavior will be integrated into the analysis, providing a comprehensive quantitative perspective on the regional business landscape.

**Keywords;** SHRM, Strategies, Organizational Behavior, Digital Transformation, Business Performance, Quantitative Research



# **Informed Decision Making: Market Research and Its Role in Increasing Jobs in Kosovo**

Agim Zuzaku [0000-0003-3811-9093]

University for Business and Technology, Pristina, Kosovo

agim.zuzaku@ubt-uni.net

**Abstract.** Informed decision-making is a key expression for the development of businesses and the creation of new jobs in Kosovo. This paper analyzes the role that market research plays in the process of informed decision-making and in increasing jobs. Market research forms the foundation of informed business decision-making, providing important information that helps businesses understand market needs and consumer preferences. This process is used to identify new market opportunities and create appropriate strategies to respond to them. In this context, this paper examines the role of market research in the development of business in Kosovo. Kosovo has experienced a challenging period in the field of business development, with a high number of business closures. Through the analysis of current market research practices in Kosovo, this study aims to determine how well this process is used in the development of local businesses. Through the increased use of market research, this paper highlights the potential for increasing jobs in the country and the positive impact it can have on creating a favorable business environment. At a time when the creation of new jobs and the development of business are essential for the growth of Kosovo's economy, market research makes a big difference in the goal of achieving these goals. This paper aims to raise awareness of the importance of market research and contribute to the promotion of informed decision-making and job growth in Kosovo.

**Keywords:** Decision-Making, Market research, Economic Development, Unemployment, Businesses

# Employment Practices Using Artificial Intelligence in Healthcare: A Systematic Literature Review

Bojan Kitanovikj

University Ss. Cyril and Methodius in Skopje, Faculty of Economics-Skopje, North Macedonia

bojan.kitanovikj@eccf.ukim.edu.mk

**Abstract:** In recent years, human resource management (HRM) has witnessed an increasing awareness of the potential applications of artificial intelligence (AI) technologies. However, the practical integration of AI in HRM, particularly in the domain of employing new members of the workforce in the healthcare sector, remains an underexplored frontier. The proliferation of AI, bolstered by the emergence of user-friendly tools and chatbots, has paved the way for a paradigm shift in employment practices in healthcare. Notably, a conspicuous gap exists in the literature concerning a comprehensive overview of AI's organizational-level impacts on recruiting and managing nurses, doctors, physicians, and other healthcare staff. The objective of this study, therefore, is to fill this gap by systematically analyzing and synthesizing existing academic contributions related to the use of AI for recruitment in the healthcare sector. To accomplish this objective, a rigorous systematic literature review is employed, examining peer-reviewed articles in scientific journals, written in English, and published until 2022. With this, the study will identify the most cited articles, and the most productive authors, and showcase the main findings, and topic hotspots. The findings of this study offer invaluable insights for both researchers and practitioners in the field of HRM, offering guidance on harnessing AI technologies to optimize employment processes in an ethical and effective manner.

**Keywords;** Employment, Human resource management, Artificial intelligence, Healthcare, Systematic literature review

**JEL Classification:** M12, M51

# **Enhancing Job Satisfaction and Organizational Commitment through Managerial Support: An Employee Perspective within the Private Sector in Kosova**

Fisnik Bytyqi

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

fisnik.bytyqi@ubt-uni.net

**Abstract.** This quantitative research study examines the crucial role that managerial support plays in influencing both job satisfaction and organizational commitment. Data were collected through a thorough questionnaire from employees within the private sector in Kosova, small and medium- sized enterprises, at two phases in time through random sampling technique. It explores the various dimensions of managerial support and their direct and indirect impact on employee attitudes, motivations, behaviors and work performance. Through the data collected, this study provides insight into the significant impact of creating a supportive work environment and provides practical recommendations for managers to enhancing managerial support within the workplace, ultimately leading to increased job satisfaction and organizational commitment.

**Keywords:** Managerial Support, Job Satisfaction, Employee Performance, Organizational Commitment, Organizational Performance, Private Sector.

# IC- MODERN MUSIC, DIGITAL PRODUCTION AND MANAGEMENT

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# **A study of aesthetic, social and technological changes in music: social educational process and cultural transformation in the present day**

Klevis Gjergji

Dr. Klevis Gjergji-UBT-University of Business and Technology-klevis.gjergji@ubt-uni.net

**Abstract.** Social educational process and cultural transformation are concepts that are closely related to each other. They refer to the ways in which education and society influence and shape each other, bringing about changes in values, behaviors and social structures. The social educational process includes the interaction between education and society. Education as a fundamental institution in society, responsible for the transmission of knowledge, skills and values. Cultural transformation refers to significant changes in the values, behaviors, norms and customs of a society over time. These changes depend on different factors, among which we can mention: technological advances, globalization, economic and educational changes. This paper is based on previous experiences and aims to point out: the connection of learning practices and today's transformations in the perception of art and music, as a strong indicator of aesthetic changes; the influence of different social and cultural elements that are interconnected and represent change and development; presentation of new technological formats, models and contents. An interdisciplinary study where: digital innovations, different indicators (data) and applied methodologies, opportunities for the development of new competences, cultural policies and indicators of new study approaches are related. The research on historical data, contemporary and pedagogical practices of music-making, will present the tools, the way of adapting these data in teaching and curricula of today.

Keywords: Education, music, transformation, technology, aesthetics.

# Music Business in Kosovo

Aida Gjikolli

MSc.Aida Gjikolli-UBT-University of Bussines and Technology aida.gjikolli@ubt-uni.net

**Abstract.** This scientific study aims to shed light on the current state of the music industry in Kosovo and to understand the challenges and opportunities that affect this important sector of Kosovo's culture and economy. An important part of the statement is focused on the role of technology and its impact on the production, distribution and promotion of music in Kosovo. While there have been major technological advances, challenges related to music piracy and copyright have also been identified. Also, the paper explores the marketing and promotion practices of artists in Kosovo, including the role of social media and concerts in increasing their success. The financing of the music industry and possible investments in this sector are also analyzed. Through an analysis of these topics, this paper aims to provide a comprehensive picture of the music business in Kosovo today and discuss the future prospects of this industry, including the potential challenges and opportunities that lie ahead. This study aims to assist industry professionals, donors and politicians in better understanding the music sector and help formulate future policies and strategies for its development.

**Keywords:** Music business, Kosovo, Music industry, Technology, Marketing, Financing, Perspective.

# The Inclusion of folk elements in Kosovar rock

Armend Gjoni

MSc.Armend Gjoni-Musicologist-arm.xhoni@gmail.com

**Abstract.** This paper investigates how rock bands in Kosovo have influenced the creation of a special rock sound that reflects the elements of Albanian folk music. This research focuses on the years 1970, 1980 and 1990. First, the adaptation of world rock to the Albanian audience in a changed social and cultural context is addressed. Second, these elements of folk were addressed in terms of how they served to mediate national identities, helping to raise listeners' ethnic awareness. This paper is based on several Kosovar rock groups, including the groups MAK, Tjurmët, Minatori, Fisnikite, Trix, Jericho, Troja, etc. Also, the use of folk instruments and the techniques used to create interesting contrasts in their music are analyzed. Through this research, it is intended to show that this influence of folk music on Kosovar rock, in general, has created a special style that has left a significant mark on the musical culture of Kosovo and beyond in Albania.

**Keywords:** music, rock, folk, sound, group, instrument, etc.

# Exploring the fusion of technology and Albanian musical creativity in the digital age

Ardita Bufaj

Ardita Bufaj-Teacher/ University of Arts, Tirana-arditabufaj@yahoo.com

**Abstract.** In the digital age, the merging of technology and musical creativity has become a complex and transformative exploration. Through this topic, we will explore sonic landscapes where advances in technology profoundly shape the way music is composed, produced and simultaneously experienced. We discover the symbiotic relationship between digital tools, and the spiritual creativity of humanity, revealing their collaborative potential in pushing musical boundaries. From algorithmic composition to virtual reality performances, this exploration illuminates the promising horizons of artistic innovation at the intersection of technology and music. Regarding the study on this topic, we delve into Albanian musical creativity within the digital age, mainly after the 90s. We will explore how modern advances in technology have uniquely influenced the traditional and contemporary music of Albania. From the digitization of traditional instruments to the use of digital platforms for musical cultural preservation and innovation, we will examine how technology is reshaping Albanian musical heritage. By studying the integration of electronic elements, computer programs and digital production techniques, we discover the transformative possibilities for Albanian music and its global impact. This exploration illuminates a dynamic crossroads where technological evolution meets a rich expanse of Albanian musical heritage, opening new horizons for artistic experimentation and cultural appreciation. Various digital platforms, today circulate around the globe. Precisely, by means of various techniques, today we make our Albanian music known beyond our borders. Albania's rich musical heritage meets the digital realm, ushering in a new era of innovation and preservation. We delve into how digital platforms and tools are enabling the spread of traditional Albanian melodies, instruments and vocal styles, fostering an appreciation of this unique musical tradition. Additionally, we explore the emergence of contemporary Albanian artists who use technology to merge traditional sounds with modern electronic elements, redefining the boundaries of Albanian music. Not only contemporary music, but also many other currents of musical creativity, are part of a wide range of digital interaction. This exploration sheds light on the transformative potential of technology in shaping and revitalizing Albanian musical creativity, preserving its essence while taking it into the future.



## **New perspectives of revitalization and re-conceptualization of the forms of Kosovar musical folklore - Re-arranging folk songs with new contemporary musical tools**

**Abstract.** This paper deals with the possible perspective of new forms of aesthetic musical development of Albanian folklore in Kosovo through new models of orchestration and re-arrangement of existing musical materials. The re-arranging and re-conceptualization of the folk songs of Kosovo has undergone different stylistic permutations during the middle of the 20th century until today, including a variety of genres from rock'n'roll, pop, jazz, electronic, etc. These permutations often have taken the form of "covers", classic re-arrangements, citations and "leitmotif" usage in contemporary classical music works, styles that have taken the form of "songs in the spirit of folklore" and similar usages and adaptations. Musical elements, motifs, harmonies, special rhythmic texture and many different songs have been treated as re-arrangements but also as fragments of larger works including classical music and many other genres with different goals of musical development. While these mainly remain within the realm of adaptation there are other new forms where the songs can take another life and be re-worked and enriched rather than adapted.

Folk songs and folk instrumental work in the 20th-21st century in Kosovo has mostly served as musical material to be used to compose new works or re-define existing work, what is less used is the contrary function, orchestration and compositional tools to be used to enrich the songs themselves. A re-arranging format that has not been used much or at all in Kosovo is the most cinematic format that has been present since the first works of composers such as Vangelis and others after him, where the folklore elements of a certain country are reflected through massive orchestration with large ensembles, with multi-percussion re-arrangements, with synthesis and with combinations of elements of repetitive minimalist music and other electronic instruments. This type of re-arrangement and processing of folklore has been used in various forms and has the potential to produce musical effects that present our folklore on a new and post-modern platform. The article analyzes new compositional and orchestral versions of songs that are elaborations of mountain songs, with cifteli, with tupan, surla and others, composed for the "Liburn Jupolli Ensemble" and compares this way of work with the existing techniques of using folk music material. These are re-worked with massive orchestral and electronic arrangement where the purpose of the orchestration and the use of certain instruments in those certain songs is to reflect the context of the lyrics in the song and the approach of the narration in the lyrics of the song with modern means of expression, with purpose to illustrate much more deeply and the text of these songs. This potential approach in orchestration is elaborated with the perspective of enlarging, multiplying and strengthening the existing folkloric instruments of Kosovo in an orchestral format. Rather than re-defining the songs, we re-conceptualize the orchestration in order to enrich the existing material, not necessarily "adapt" its identity within a specific style. How are traditional songs preserved or transformed when they move in space, especially when they are adopted and adapted in other cultural and linguistic areas? the historical updating of songs as they are transmitted over time: or how the adaptation of words, music or performance to new social contexts makes it possible to rejuvenate and give new meaning to old songs for the performers and their audiences.

Any other variation on the theme "Chansons voyageuses: Song traditions on the move across borders and centuries" can be proposed. Papers on other themes, especially on current research on song tradition in Britain, are also welcome.

# The principles of the musical language of Zeqirja Ballata in the piano piece "Solo de concert"

Dr. Indira Çipa

Indira.cipa@ubt-uni.net

**Abstract.** The topic titled as *The principles of Zeqirja Ballata's musical language in the piano work "Solo de concert"* brings the results of a comprehensive analytical approach made on one of Zeqirja Ballata's 14 piano works. Z. Ballata (1943) is an emblematic figure of Kosovar music in general, and of modern and postmodern music in particular. In his creative opus of about 160 works, there are also 14 piano works, of which in Solo de concert this theme elaborates the means of expression. The research used qualitative method. According to the empirical corpus, the study is *Case study*. The purpose of the research was to argue the frequent classifications of Z. Ballata by musicologists and critics as a modern and postmodern composer, as well as to decipher the content of this work that should serve as an effective tool in the concretization process for performers and pianistic pedagogy. The object of analysis, in addition to the form and general historical data for the work, are also the musical parameters as: linear expression, consonant structures, rhythm and its components, dynamics, notation. In addition, the analysis goes further with the treatment of the aesthetic effect of synthesizing the analyzed musical parameters and comments on their interaction. In the paper as graphic means of argumentation, the photos, notational fragments and tables were used.

**Keywords:** musical language, work, piano, structure, modernism

# **Amanmedetet - How well do we know them, what are they, where do we find them....**

Behar Arllati

Prof.Dr. Behar Arllati-UBT-University of Bussines and Technology-behar.arllati@ubt-uni.net

**Abstract.** Amanmedetets, as a rare set of interpretations, have been treated very little or not at all as such. The reason for this lack of recognition and their inadequate treatment should be found in the unfair and incorrect treatment of this genus due to their relative age, or even due to the similarities they have with other folkloric types. This has also caused these creations to be 'orientated' by researchers towards a folkloric type that perhaps has little to do with amanmedet or that 'touch' each other. They have almost never been treated as a special folkloric type. The most that could have happened to them, is their categorization in a folklore 'subgroup' or 'subtype', often quite insignificant. As a result, today, young researchers either have not heard of them at all or, many, may have read it somewhere in a study only as the term 'Amanmedete', and that's it. What do the Amanmedetes represent, how close are they to Jaret and Elifet from Shkodra, what are they, how should they be treated interpretatively-professionally, where are they located geographically, does Kosovo have this folkloric type, how (few) are they widespread as such or how much (little) seriousness have been treated over the decades, it will be discussed in this scientific study, I would call it interesting and a little rarer.

**Keywords:** Amanmedete(s), Folklore types, folklore subgroups, Lamentations, Elegies, Ballads, Kurbet songs

# Resisting Time and Innovation: The Enduring Musical Heritage of Rexho Mulliqi and Nexhmije Pagarusha

Kristina Perkolaj

PhD. Cand. Kristina Perkolaj, University for Business and Technology [kristina.palokaj@ubt-uni.net](mailto:kristina.palokaj@ubt-uni.net)

**Abstract.** This scholarly paper, excerpted from an upcoming monograph, (that will be published and promoted on November 2023) celebrates the extraordinary lives and enduring legacies of two distinguished personalities: the composer R. Mulliqi and the singer N. Pagarusha. Their intertwined destinies weave a captivating narrative of love, music, and lasting influence, serving as a reminder that their journey was not merely a convergence of two exceptional talents, but a symphony of passion, dedication, and shared purpose. Through his musical oeuvre, composer R. Mulliqi remains a central figure—a pioneering professional and visionary composer of his time. He became a trailblazer across various musical genres, including vocal-instrumental, chamber music, and orchestral compositions within Kosovo's classical music landscape. The "innovative" spirit embedded in his works, crafted between the 1950s and 1980s, resonated beyond historical periods of classical tradition however, was perpetually nourished by an unwavering dedication to the Albanian musical heritage. On the other hand, fulfilling her interpretative passion, the diva singer N. Pagarusha made her gradual entry into the artistic scene in Kosovo since the 1950s. She embodied musical perfection through her voice, a celestial instrument that transcended eras, cultures, and hearts. As we commemorate the 100th and 90th anniversaries of their birth, we celebrate not only their individual contributions but also the beautiful resonance of their lives interwoven with love and music, and acknowledge the resilience of their musical heritage in the face of contemporary trends and innovations of modern times.

**Keywords:** Rexho Mulliqi, Nexhmije Pagarusha, Enduring legacies, Celebration, Musical heritage.

# "Reimagining Kosovar Folklore: Enrichment of Traditional Songs and their lyrical context through contemporary orchestration and composition techniques/tools"

Liburn Jupolli

Prof.Assist.Dr. Liburn Jupolli-UBT-University of Business and Technology-liburn.jupolli@ubt-uni.net

**Abstract.** This article explores the revitalization and re-conceptualization of Kosovar musical folklore through contemporary orchestration and the enrichment of traditional songs. The article compares aspects and the evolution of traditional music in Kosovo, including its adaptation into various genres such as rock'n'roll, pop, jazz, and electronic music. While many adaptations have surfaced, there's a growing trend towards reworking and adaptation, rather than enriching their lyrical/programmatic aspects through orchestration. One novel approach considered is the cinematic format, drawing inspiration from composers like Vangelis, Hans Zimmer, etc., where folklore elements are reflected through massive orchestration, electronic instruments, and repetitive minimalist music. While artists in Europe, especially northern Europe, have re-conceptualized aspects of their folklore, this approach that presents traditional folklore on a new post-modern platform has not yet been explored with Albanian Folklore in Kosovo. The article analyzes recent compositional and orchestral versions of mountain songs, featuring instruments like çifteli, tupan, and surla. These songs, composed for the "Liburn Jupolli Ensemble," employ massive orchestral and electronic arrangements to deepen the context and narrative of the lyrics. This approach aims to expand, multiply, and strengthen Kosovo's existing folkloric instruments in a new orchestral format as a means of fostering further use of these instruments and re-contextualizing existing songs for new generations. Instead of redefining the songs, the focus is on re-conceptualizing orchestration to enrich the material without necessarily adapting its identity to a specific style.

**Keywords:** Kosovar folklore, contemporary orchestration, folk song revitalization, musical adaptation, cultural enrichment, traditional music, post-modern platform, compositional techniques, cinematic arrangements, electronic instruments, cultural preservation.

# IC-POLITICAL SCIENCE

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# Impact of Niger Delta Crisis and National Security in Nigeria: Appraisal of the Amnesty Programme Granted

Kamal Tasiu Abdullahi<sup>1</sup> and Bashir Dan-Inna<sup>2</sup>

<sup>1</sup>Department of Economics, Faculty of Economics, Istanbul University  
kmlts256@gmail.com

<sup>2</sup>Department of Economics, Ibn Haldun University  
bashmoh09@gmail.com

**Abstract.** The fragility of the nation's take-off, as the historical antecedent, created Nigeria's socio-economic, cultural and political woes. The Nigerian historical developments are better explained by the adage that says "when a fowl perches on the rope, it and the rope automatically become unsettled." This largely remains so till this moment in Nigeria's history as the various events portend particularly in the Niger Delta region. The character and attitude of the Federal Government to the agitation in the region is well known and documented. The use of force to keep the people down and exploit their oil and gas resources could not resolve the crises. In spite of the fact that we now have a 'stable' and 'fraudulent' democratic government in place, the country is yet to be freed from disturbing socio-economic, cultural and political developments. Today, it is innocuous to state that Nigeria is still without a properly consolidated political system. It is a known fact that with the proclamation of the amnesty there seems to be relative peace and national security have since returned to the region. However, the Federal Government is still trying to restore peace in some places with the aim of restoring peace and safety of the nation's economy.

**Keywords:** Niger Delta Crisis, National Security, Nigeria, Amnesty Programme

## **CHARACTERISTICS OF DIGITAL DIPLOMACY OF SMALL STATES: THE CASE OF THE REPUBLIC OF KOSOVO**

**Abstract.** The role and importance of digital diplomacy is growing at an extraordinary speed as a result of its adoption by states and intergovernmental organizations. It favors small states with limited geographical, human, financial and military capacities, offering opportunities for their voices to be heard internationally. The main purpose of this paper is to specify the characteristic points of the digital diplomacy of small states, taking the Republic of Kosovo as a case study. For the realization of the research were used qualitative methods, based on the collection of data from the bibliography and credible Internet sources related to the digital diplomacy of small states and the Republic of Kosovo. Research results show that unlimited digital resources have been adapted to the needs of small states, helping and facilitating the realization of their foreign policy objectives. A typical example is the Republic of Kosovo, which as a small and relatively new state has used the basis of digital diplomacy to increase its recognition in the international arena. Even without reaching a decade of independence and in difficult circumstances of state building, Kosovo has become part of the states with the best digital diplomacy in the world. However, part of Kosovo's digital diplomacy should also be the application of a rigorous strategy to combat the wild Serbian propaganda that risks damaging its image. The conclusions aim to contribute to the increase of knowledge related to the digital diplomacy of small states, with special emphasis on the Republic of Kosovo.

**Keywords:** digital diplomacy, small states, Republic of Kosovo, international recognition, counterpropaganda



# The challenges of Kosova in the field of counterintelligence

Fatos Rushiti and Llokman Mirtezani

University for Business and Technology, Prishtina 10000, Kosova

**Abstract.** The latest attack in the Monastery of Banjska by a group of Serbian terrorists makes the security sphere in Kosova even more challenging. This happens at a time when the state is not in the most favorable geopolitical position in the region, primarily due to the lack of a political agreement with Serbia. Serbia, not only through hybrid warfare but also through terrorist actions, is attempting to create chaos within the territory of Kosova. This hostile effort by Serbia cannot happen without the assistance of potential collaborators in Kosova. In this context, my analysis aims to highlight the facts and circumstances surrounding the inadequate functioning of the counterintelligence sector in Kosova. Furthermore, my analysis aims to bring to light the segments of non-cooperation and non-functioning of the institutions that cover the security sphere in Kosova.

**Keywords:** Counterintelligence, Security, Serbia, Kosova, etc

# The impact of environmental policies and institutional priorities in environmental protection in Kosovo

Nexhat Balaj

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

nexhat.balaj@ubt-uni.net

**Abstract.** The purpose of this study is to study the role of environmental policies in the Republic of Kosovo and the Institutional commitments for the implementation of policies in the field of environment to achieve the environmental criteria of the EU. The study is based on the qualitative (qualitative) method, which consists in the collection and processing of data and analyzes focused on the institutional framework in Kosovo, and the directive of the European Union for the environment. Kosovo has a very new environmental legislation, which was drafted mainly during the last years. Environmental legislation is generally aligned with European Union standards, because it is based on the same goals that the European Union's environmental sector legislation is based on. The environmental policy of Kosovo aims to improve the quality of the environment, protect the health of the population, the careful and rational use of natural resources, the promotion of measures at the international level to overcome environmental problems. The environmental protection law harmonizes economic development and social welfare with the basic principles for environmental protection according to the concept of sustainable development. The purpose of this law is to promote the creation of a healthy environment for the population of Kosovo by gradually bringing the environmental standards of the European Union.

**Keywords:** environmental policies, Institutional, Kosovo, European Union

# The managerial aspect of public interest at the local level - the case of the municipality of Gostivar

Jeton Rakipi

jetonrakipi@hotmail.com

**Abstract.** In the process of decentralization of power, local self-government units transferred a large number of essential competences for more efficient, economical and democratic management of public affairs in local communities in the field of urban planning, for building permits, regulation of space and arrangement of land for building, protection of the environment and nature, social protection and protection of children, education, protection and rescue of citizens and material goods, fire department and other duties established by law. The municipality exercises its competences through the municipal administration or through the establishment of local public enterprises and public institutions, and the performance of certain works can be delegated through other legal or natural persons, based on an agreement for the performance of works of public interest, in accordance with the law. The system of local self-government in the Republic of North Macedonia is built on the principles of the European Charter for Local Self-Government, ratified by the Assembly of the Republic of North Macedonia in 1997, and good practices in the member states of the European Union. The right to local government is a constitutionally guaranteed right, and the system according to the norms is regulated by the Constitution of the Republic of North Macedonia, the Law on Local Self-Government, the Law on Territorial Organization of Local Self-Government, the Law on Financing of Local Self-Government Units and other sectoral laws.

**Keywords:** local self-government, politics, power, common good, public interest, decentralization.

# The impact of the Ukrainian-Russian conflict on military modernization in the eastern flank

M. Grochlaska

Student at War Study University

maja.grochalska@gmail.com

**Abstract.** The Ukrainian-Russian conflict that erupted in 2014 has become one of the most important geopolitical events in the international arena and has had a significant impact on the situation in Eastern Europe. This presentation aims to analyse the effects of this conflict on the modernisation of armed forces in the Eastern Flank region, in particular the NATO and Eastern Partnership countries. In the context of the Ukrainian-Russian conflict, many countries on the Eastern Flank have undertaken significant modernisation efforts in their armed forces. The introduction of new technologies, the purchase of advanced weaponry and the development of defence capabilities have become a priority for these states. The presentation is based on an analysis of the modernisation strategies and defence budgets of countries such as Poland, Lithuania, Latvia and Estonia. The presentation will also discuss aspects of international cooperation, especially NATO support for the modernisation of troops on the eastern flank and military integration of the Eastern Partnership countries. We will present examples of joint exercises, training programmes and initiatives to strengthen the region's defence capabilities. The analysis of the impact of the conflict on military modernisation in the eastern flank is crucial for understanding the dynamically changing security situation in the region. The conclusions of this study have important implications for further defence policy and strategic planning in the region. It is worth emphasising that the issues discussed are interdisciplinary, combining geopolitical, military-technical and strategic aspects, which makes them highly relevant to the security and stability of Eastern Europe.

**Keywords:** Ukrainian-Russian conflict, modernisation of the armed forces, NATO's, eastern flank, regional security, military technology, international cooperation

# Impact of the Ukraine War on the Evolution of Threat Perceptions in the Western Balkans

Alfred Marleku, Elona Belaj

UBT College, Faculty of Political Science, Lagjja Kalabria 10000 Prishtinë, Kosovo

{alfred.marleku, eb600522}@ubt-uni.net

**Abstract.** The Ukraine war has brought about changes to the security situation in Europe, which has had effects on the Western Balkans. This research paper explores how the Ukraine war has influenced the security strategies of countries in the Western Balkans. Through an analysis of these strategies the study investigates how perceptions of threats have changed among Balkan states taking into account aspects such as military modernization, border security and diplomatic efforts. By comparing security approaches after the Ukraine war this paper highlights shifts in threat awareness among Western Balkan countries and how it has led to adjustments in their national security plans. This examination provides insights into the evolving security landscape in the Western Balkans and the impact of the Ukraine war on broader European security paradigm.

**Keywords:** Ukraine War, Western Balkans, National security strategies, Threat perceptions, EU security environment

# Aspekte krahasuese rreth të drejtave kombëtare mes serbëve të Kosovës dhe shqiptarëve në Serbi

Veton Zejnullau PhD

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

**Abstract.** Historia e Ballkanit që nga kohërat e lashta e deri më sot është e mbushur me shumë konflikte mes popujve të tij. Ajo që ne do të analizojmë në këtë punim është historia e konflikteve shumë shekullore mes shqiptarëve si populli më i lashtë i Ballkanit dhe pasardhësit e ilirëve në njërin anë dhe serbëve sllavë në anën tjetër të cilët u vendosën në gadishullin ballkanik gjatë shekujve gjashtë dhe shtatë. Fokusi jonë i studimit do të jetë te të drejtat e shqiptarëve në Serbi dhe serbëve në Kosovë nga aspekti krahasues me theks të veçantë në gjendjen e tyre pas luftës së Kosovës dhe organizimit të konferencave të ndryshme dhe bisedimeve të vazhdueshme shqiptaro-serbe. Duhet theksuar se të drejtat kombëtare të të dyja grupeve etnike respektive janë rregulluar me kushtetutat e të dyja vendeve dhe neve na mbetet të analizojmë ato dhe të dalim me përfundimet tona. Gjithashtu mendojmë të ndërtojmë një anketë online në internet në formatin google.doc dhe përmes përgjegjeve të responentëve të fitojmë rezultatet të cilat do të shtrojmë dhe diskutojmë në punim. Target do të jenë të dy grupet etnike sepse vetëm kështu do të fitojmë rezultate më të sakta. Gjithashtu do të nxjerrim përfundime dhe rekomandime të cilat mendojmë se duhet të merren parasysh nga faktorët vendosës në të dyja vendet. Do të shfrytëzojmë literaturë nga të gjitha burimet si ato shqiptare dhe ato serbe por edhe nga autorët e huaj që janë marrë me këtë problematikë si dhe burime nga interneti sidomos që kanë të bëjnë me organizatat e mëdha ndërkombëtare dhe shtëpitë informative më të mëdha si ato vendore ashtu edhe ato ndërkombëtare.

**Keywords:** Kosova, Serbia, shqiptarët, serbët, të drejtat kombëtare, bashkësia ndërkombëtare

# **Constrictive Memory: A new tool for socio-political instability in protracted conflicts**

Angelica Vascotto, Damir Kapidžić

**Abstract.** Conflict resolution is often intended as a tool to solve clashes on an immediate level. Depending on the complexity of the situation and the intentions of the parties involved, literature and empirical cases present many strategies that could be adopted in such cases: from diplomatic mediations to the deployment of peacekeeping forces; from military escalation to contention. Once a certain degree of security is reached, the re-establishment of a secure environment is to be accordingly designed. But what happens after conflictual situations that were based on features of personal identity and resulted in the perpetration of atrocious crimes against civilians? Is the lack of armed confrontations the most functioning way to convey a sense of security to a population subjected to ethno-religious disparities? Can memories possibly lead to a renewed rise of tensions? The last decade has seen a flowering interest in the topic of memory which started to be studied from the most varied perspectives. In fact, apart from being a mere aspect of everyone's daily life experiences, the concept itself lends to being treated from the most diverse set of disciplines. This is why scholars from numerous areas of study decided to focus on the topic and to make new important observations in relation to this extremely ample-angled subject. From sociology to global studies and from psychology to political science, the concept of memory has increasingly become a central theme in the literature. Not only became important to understand the dynamics leading to the formation of this set of ideas and emotions but also the impact these have on the societies we live i

# Cultural diplomacy as a tool of national security

Arben Arifi

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

arben.arifi@ubt-uni.net

**Abstract.** Cultural diplomacy has gained prominence in the realm of international relations, becoming a valuable tool for countries to enhance their global image, build relationships, and extend their influence. This paper introduces the concept of Cultural Diplomacy, which is relatively new in the context of Kosovo's foreign policy and international public relations. Kosovo boasts a wealth of cultural heritage, and many nations place art and culture at the forefront of their promotional endeavors. These nations understand that showcasing their cultural legacy offers an opportunity to express their identity, shape a positive image, and advance their political objectives. The study's findings will enhance our comprehension of the role of cultural diplomacy in international relations and offer valuable insights for Kosovo as it seeks to leverage cultural diplomacy for better international relationships. So in a word, cultural diplomacy also helps in the security of Kosovo and can be used as a tool to strengthen security

**Keywords:** Cultural diplomacy, Kosovo, international relationship, foreign policy, security etc.



# CYBER THREATS RISK ANALYSIS IN STATE POLICIES IN GUARANTEEING NATIONAL SECURITY

Bahri Gashi<sup>1</sup>, Bashkim Smakaj<sup>2</sup>, Ngadhnjim Brovina<sup>3</sup>, Arian Kadriu<sup>4</sup>

**Abstract.** Cyber threats, generally including hybrid warfare, are among the greatest challenges that states and organizations are facing in modern times. This is due to the significant evolution of technology in recent years, which has made a vast amount of information available to individuals and organizations. Such threats can cause serious damage to critical infrastructure, such as transportation, energy, and water resources, as well as communication and financial systems. They can also impact a country's national security and political stability. To address this threat, states have implemented various policies and measures to ensure national security against the backdrop of cyber security measures. These measures often involve establishing the foundation for national strategies, legal regulations, and specialized agencies responsible for protection against cyber threats. These agencies collaborate with both public and private organizations to detect, prevent, and respond to cyber-attacks. States have also taken steps to increase public and business awareness regarding cyber threats and to assist in the prevention of cyber threats and the protection of national assets. This study will provide insights into the policies and measures that states needed to take in order to ensure national security. Overall, states require proactive policies and detailed strategies aimed at preventing cyber threats and safeguarding critical infrastructure from potential attacks.

**Key words:** analysis, risk, cyber threats, state policies, national security

# IC-PHARMACEUTICAL AND NATURAL SCIENCES

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# SYNTHESIS AND CYTOTOXIC ACTIVITY OF SOME NOVEL CHROMANDIONE DERIVATIVES

Ahmed Jashari<sup>1</sup>, Fatjona Krasniqi<sup>2</sup>, Rina Krasniqi<sup>3</sup>, Emil Popovski<sup>4</sup>

<sup>1</sup>Group of Chemistry, Faculty of Natural Sciences and Mathematics, University of Tetovo, bld. Ilinden,nn, 1200, Tetovo, North Macedonia

<sup>2</sup>Alma Mater Europaea Campus College” Rezonanca “, Prishtine, 10000, Kosova

<sup>3</sup>Pharmacy Department, UBT College – Higher Education Institution, Prishtina, 10000, Republic of Kosova

<sup>4</sup>Institute of Chemistry, Faculty of Natural Sciences and Mathematics, University of Skopje, Arhimedova5, 1001 Skopje, North Macedonia

ahmed.jashari@unite.edu.mk

ahmed.jashari@gmail.com.

**Abstract.** The intense investigation in medicinal chemistry showed that many of the coumarin derivatives with expressed anticoagulant activity, are showing anticancer effects in the same time. Thus, very known and commercially available medicaments like Warfarin, Phenprocoumon (marcumar), Sintrom (acenocoumarol) and Bromadiolone are intensively studied for their cytostatic, apoptotic and antiproliferative activities. This triggered interest of design and synthesis of novel coumarin derivatives with high cytotoxic and antiproliferative potential. 2-Aminothiazoles were used in order to couple them with 4-hydroxycoumarin, and a series of novel chromandione derivatives were synthesized. The thiazolohydrazilidene-chroman-2,4-diones had shown to exhibit cytotoxicity on human breast cancer cell line MDA-MB-231. MDA-MB-231 cells are very sensitive to treatment with B-Raf kinase inhibitors blocking the RAF/MEK/ERK signaling pathway and affecting in this way the tumor growth. Among the three RAF isoforms in humans (A-Raf, B-Raf, and C-Raf), B-Raf is the most critical to mediate Ras activity. A significant fraction of melanoma, colorectal, thyroid and breast cancers have activating B-Raf mutations, particularly at valine 599. The compounds that were synthesized had shown significant B-Raf kinase inhibition.

**Keywords:** synthesis, hydrazinyldiene-chroman-2,4-diones, cytotoxicity

# A REVIEW ON UV CURABLE EPOXYPOWDER COATINGS

Belma Gjergjizi Nallbani<sup>1,2</sup>, Memet Vezir Kahraman<sup>2</sup>

<sup>1</sup>Faculty of Pharmacy, UBT College - Higher Education Institution, Lagjia Kalabria, 10000 Pristina, R. of Kosovo

<sup>2</sup>Chemistry Department, Faculty of Science, Marmara University, 34722 Istanbul, Turkey

belma.nallbani@ubt-uni.net  
mvezir@marmara.edu.tr

**Abstract** The oldest method of preventing corrosion is to apply polymer coatings on metals and alloys. This method has been around since ancient times. Prior to addressing the passage of water and oxygen through the coating to permit corrosion of the substrate material, the barrier function of organic coatings was first discovered during the previous ten years. The common coatings that incorporate solvents before curing are liquid coatings based on epoxy. Because of its excellent qualities, powder organic coatings are a wonderful choice that can be used in a variety of applications and sectors. Additionally, because they don't contain solvents in their composition, they offer an environmental benefit over traditional liquid coatings. The usage of volatile organic compounds (VOCs) needs to be reduced urgently due to tighter environmental restrictions and rising consumer awareness of the need to safeguard the environment. As a result, they are rapidly being employed in a variety of applications, including household appliances, car interiors, and aeronautical parts. Epoxy-based resins offer superior tensile qualities compared to other organic powder coatings. They are extremely stiff and robust, which helps to provide superior wear resistance. There are several papers and research regarding powder coatings that aim to enhance their qualities. The compositions of powder coatings were extruded, crushed and screened to gain powder of coating. The powder always was stored at room temperature. The powder coatings often operated by two kinds which were electrostatic spraying method and fluidized bed dipping method. After that, the powder was heated to melt and cure. Finally, a smooth bright permanent film on articles was formed to achieve the purpose of decoration and corrosion. The future development trends of powder coatings are illustrated. UV-curable powder coatings present some new possibilities for the curing of heat sensitive substrates and offers more advantages compared to thermally cured powder coatings. UV-curing can be performed at lower temperatures than possible by thermally activated systems. The curing conditions used in UV curing technology and its advantages such as fast curing and high efficiency, low capital investment, solvent elimination, low cost and energy consumption were also presented.

**Keywords:** Powder coatings, UV-curing, Epoxy resin, Coating process

# SYNTHESIS AND CHARACTERIZATION OF NATURAL LIPSTICKS FROM ESSENTIAL OIL EXTRACT

Besjana Alija<sup>1</sup>, Dhurata Dragusha<sup>1</sup>, Miribane Dërmaku-Sopjani<sup>1</sup>, 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

**Abstract.** People have begun to widely use essential oils knowing that they can help relieve many disorders and their symptoms. The bioactive compounds in these oils may have several health uses and actions on the human body and health.

With this paper we have tried to provide more information on the extraction method of these oils, the uses, the benefits of some of these oils as well as the determination of some of their chemical properties including the determination of the acid number, saponification number and ester number of these oils: lemon, orange, apple, carrot, cinnamon and ginger oil. We have also determined the retention factor based on thin layer chromatography, and will include the effects of these oils on the human body.

Then, using these oils, several types of natural lipsticks were obtained, for which we also used different oils and fats such as: beeswax, coconut oil, castor oil, cocoa butter, vaseline, and vitamin E. All these products are mixed in different ratios and two series of lipsticks are obtained. The melting point of the obtained lipsticks was determined, their stability was compared and their effect on the skin was tested, their pH was measured and their thin layer chromatography was developed.

**Keywords:** essential oils, natural lipsticks, extraction, thin layer chromatograph

# DETERMINATION OF MACRONUTRIENTS, MICRONUTRIENTS AND HEAVY METALS IN DIFFERENT PARTS OF SAMBUCUS NIGRA FROM KOSOVO

Bujar Qazimi<sup>1\*</sup>, Trajçe 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, 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

**Abstract.** The aim of this study was the determination of macroelements, microelements, heavy metals, and potentially toxic elements in spontaneous leaves and flowers of *Sambucus nigra* collected in different localities in Kosovo. 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 inductively coupled plasma–atomic emission spectrometry (ICP-AES) method and inductively coupled plasma–mass spectrometry (ICP-MS) method. The leaves exhibit a very similar mineral profile to the flowers of *S. nigra*. Variation in the content of the elements between leaves and flowers of *S. nigra* was observed with respect to geographical localities.

**Keywords:** *Sambucus nigra*, mineral content, ICP-AES, ICP-MS

# THE CHROMIUM AND VANADIUM IMPACT ON LIPID METABOLISM IN WORKERS EXPOSED TO CFA

Demush Bajraktari<sup>1</sup>, Lulzim Zeneli<sup>2</sup>

<sup>1</sup>Faculty of Pharmacy, UBT Higher Education Institution, Lagjja Kalabria, p.n. 10000 Prishtine, Kosovo

<sup>2</sup>Faculty of Medicine, University "Fehmi Agani", Str. "Ismail Qemali", n.n., 50 000, Gjakova, Kosovo

demush.bajraktari@ubt-uni.net

**Abstract.** Chromium (Cr) and vanadium (V) are elements that in trace amounts have impact in carbohydrate and lipid metabolism, but at high concentrations can be toxic, depending on the form. Data from previous studies prove the effect of Cr and V concentrations on lipid metabolism, especially in workers exposed to coal fly ash (CFA).

Selected metals (Cr, V) were measured in the samples of blood and serum from workers located in Thermal Power Plants in Kosovo and have been analyzed with the reference values. Using a biochemical analyzer Synchron CX7 (Beckman Coulter) have been analyzed the lipid profile. The blood and serum Cr and V was measured by inductively coupled plasma mass spectrometry.

The association between carbohydrate and lipid metabolism biomarkers (glucose, cholesterol, and triglycerides) and co-exposure to coal fly ash was analyzed. The workers who are part of the Thermal Power Plants had significantly higher blood Cr and V levels ( $p < 0.0001$ ) and significantly lower serum Cr and V levels ( $p < 0.0001$ ) than the control group. Statistically significant ( $p < 0.0001$ ) correlations between high blood Cr levels and low glucose/blood Cr ratios as well as between high serum Cr levels and low glucose/serum Cr ratios was established. The analyzed group have high blood V levels significantly correlated with low triglycerides/blood V and cholesterol/blood V ratios ( $p < 0.0001$ ), while high serum V levels correlated with low cholesterol/serum V ratios ( $p = 0.005$ ). Based on results, the glucose/Cr, triglycerides/V and cholesterol/V ratios should be considered when evaluating carbohydrate and lipid metabolism disorders in occupationally-exposed workers.

**Keywords:** chromium; vanadium; lipid metabolism; correlation

# CHARACTERIZATION AND SYNTHESIS OF NATURAL SOAPS FROM ESSENTIAL OIL EXTRACT

Dhurata Dragusha, Besjana Alija, Miribane Dërmaku-Sopjani, Arleta Rifati-Nixha

Chemistry Department, Faculty of Mathematical & Natural Sciences, University of Prishtina, Prishtina,  
10000, Republic of Kosova

arleta.rifati@uni-pr.edu

**Abstract.** Knowing the diversity of the plant world in general, from which we have many benefits and from the most diverse. Plant oils and extracts have been used for a variety of purposes for thousands of years. Many types of oils can be found in Albanian markets, such as: sunflower oil, corn oil, olive oil, coconut oil, grape seed oil, chamomile oil, cinnamon oil, peppermint oil, carrot oil, lemon oil, etc. Each of these oils is special and quite useful for certain issues. These oils have a wide use and are very useful for human vital health.

This paper mainly focuses on the extraction of some essential oils and the determination of their chemical properties, including the determination of the acid number, the saponification number and the ester number of these oils: oil of lemon, orange, red apple, apple carrot yellow, cinnamon, ginger, chamomile, almond and mint. And determination of retention factor based on thin layer chromatography. It will also include the effects of these oils on the human body.

Then, through these oils, several types of soaps have been obtained, for which we will talk about each type separately. For the obtained soaps, the retention factor, their hardness and the power of the foam have been determined.

**Keywords:** essential oils, retention factor, soaps, plant oils



# OXIDATIVE STRESS EFFECT IN RIBOSOMAL BIOGENESIS IN CANCER CELLS

Temaj Gazmend

Faculty of Pharmacy, College UBT, 10000 Prishtina, Kosovo

gazmend.temaj@ubt-uni.net

**Abstract.** Oxidative stress is a condition where the levels of reactive oxygen species (ROS) exceed the normal level on the cell's antioxidant defenses. Oxidative stress can cause damage of the DNA, proteins, and lipids. Ribosome biogenesis is the process of making ribosomes. Ribosome biogenesis involves the transcription, processing, and assembly of ribosomal RNA (rRNA) and ribosomal proteins (r-proteins) into functional ribosomal subunits. Cancer is a disease characterized by uncontrolled cell growth, invasion, and metastasis. Cancer cells often have increased levels of oxidative stress and ribosome biogenesis, which can promote their survival, adaptation, and proliferation in the tumor microenvironment. In this review, we discuss how oxidative stress can have different effects on ribosome biogenesis in cancer cells, depending on the type, severity, and duration of the stress, as well as the genetic and epigenetic characteristics of the cells.

**Keywords** oxidative stress, Ribosome biogenesis, acute lymphoblastic leukaemia, Therapy

# BIOMORPHOLOGICAL CHARACTERISTICS IN POPULATION IN GJILAN AND KAMENICA (KOSOVO) AND THEIR GENETIC STRUCTURE

Hyzer Rizani, Eronë Fazliu, Naser Kamberi, Gresa Reka, Smajl Rizani, Nexhat Balaj, Shkelzim Ukaj

Faculty of Food and Biotechnology Sciences, University of Business and Technology, Calabrian,  
10000 Pristina, Kosovo

naser.kamberi@ubt-uni.net

**Abstract.** In order to observe the spread of biomorphological qualities in the population of Kosovo, we took samples from different villages in Gjilan and Kamenica. In this research, we also engaged the students of the Department of Dentistry and Food Sciences and Biotechnology at UBT. These qualities have been collected by interviewing families in the municipality mentioned. The biomorphological qualities included in this study are: Black or blue eyes, free or attached earlobe, blunt or blunt tongue, left arm over right or right over left, right thumb hand over the left and vice versa, the index finger smaller than the ring finger and vice versa, and blood groups. By calculating the frequencies of the dominant-recessive genotype, the dominant and recessive allele, and by comparing the obtained results, we can give an opinion on the genetic differences or similarities with the population of Kosovo (Gjilan and Kamenica). In this study, 470 individuals were included for each quality involved, while for the blood groups where the Rhesus factor was investigated, 335 individuals were evident.

**Keywords:** Biomorphological features, alleles, genotype, frequency, blood groups, genetic balance

# CORRELATION BETWEEN PARATHYROID ADENOMA AND OSTEOPOROSIS AT YOUNG PATIENT USING PARATHYROID SCINTIGRAPHY WITH TC99M MIBI RADIOPHARMACEUTICAL (CASE REPORT)

Ismet Bajrami<sup>1,2,3</sup> Fakir Spahiu<sup>3</sup>, Ylli Kaçiu<sup>3</sup>, Elena Drakalska<sup>2</sup>, Armend Jashari<sup>3,4 \*</sup>

<sup>1</sup>University of Business and Technology UBT-Higher Education Institution Republic of Kosovo

<sup>2</sup>Faculty of Medical Science "Goce Delcev" University Stip, Republic of North Macedonia

<sup>1,2,3,4</sup>Nuclear Medicine Department in Clinical University Centre of Kosovo

<sup>4</sup>AMECC-Rezonanca

Ismet.bajrami@ubt-uni.net

**Abstract.** Nuclear medicine parathyroid scintigraphy imaging, is an important method in the identification of hyperfunctioning parathyroid glands in primary hyperparathyroidism (pHPT), but it may be also valuable before surgical treatment in secondary hyperparathyroidism (sHPT). Parathyroid radionuclide imaging with scintigraphy is a highly sensitive procedure for the assessment of the presence and number of hyperfunctioning parathyroid glands, located either at typical sites or ectopically. Osteoporosis is a bone disease that develops when bone mineral density and bone mass decreases, or when the structure and strength of bone changes. This can lead to a decrease in bone strength that can increase the risk of fractures (broken bones). At young patient the osteoporosis is rare but with early detection and diagnosing of the parathyroid adenoma with Tc99 MIBI we may prevent the bone fractures and will improve the osteoporosis treatment. A male patient 32 years old reported at our department -Nuclear Medicine Department – UCC Prishtina with generalized pain in the skeleton. He first reported in our department for bone scan. The whole body scan show multiple foci that suggested for metabolic bone disease. After 6 six month was done parathyroid scintigraphy which revealed parathyroid adenoma confirmed by biopsy. Nuclear medicine parathyroid scintigraphy imaging, is an important method in the identification of hyperfunctioning parathyroid glands in primary hyperparathyroidism (pHPT), but it may be also valuable before surgical treatment in secondary hyperparathyroidism (sHPT). Parathyroid radionuclide imaging with scintigraphy is a highly sensitive procedure for the assessment of the presence and number of hyperfunctioning parathyroid glands, located either at typical sites or ectopically. Osteoporosis is a bone disease that develops when bone mineral density and bone mass decreases, or when the structure and strength of bone changes. This can lead to a decrease in bone strength that can increase the risk of fractures (broken bones). At young patient the osteoporosis is rare but with early detection and diagnosing of the parathyroid adenoma with Tc99 MIBI we may prevent the bone fractures and will improve the osteoporosis treatment. A male patient 32 years old reported at our department - Nuclear Medicine Department – UCC Prishtina with generalized pain in the skeleton. He first reported in our department for bone scan. The whole body scan show multiple foci that suggested for metabolic bone disease. After 6 six month was done parathyroid scintigraphy which revealed parathyroid adenoma confirmed by biopsy. The study objective is to assess the sensitivity and specificity of Tc99m-MIBI as a radiopharmaceutical and the parathyroid scintigraphy as a diagnostic tool for identification of parathyroid adenoma. The study was performed in the Department of Nuclear Medicine Prishtina Equipment Gamma Camera. Sterile sodium pertechnetate (99m Tc) Fresh sterile sodium pertechnetate (99m Tc) solution for injection without oxidant eluate of 99Mo/99mTc radionuclide generator up to 2000 MBq (generator 16-20 Gbq, Monrol Turkey. 99Mo/99mTc generator and 99mTcO<sub>4</sub><sup>-</sup> from company. The molybdenum-technetium generator system is based on the principle that the shorter-lived radioactive daughter nuclide (<sup>99m</sup>Tc – T<sub>1/2</sub> 6 h) can be easily and repeatedly isolated from its longer-lived parent radionuclide (<sup>99</sup>Mo-). Because of the high sensitivity and specificity of 99mTc-MIBI scintigraphy, routine preoperative localization is becoming a standard practice. In the assessment of patients with recurrent or persistent hyperparathyroidism, localization procedures prior to re-exploration are mandatory in order to prevent the osteoporosis and other effects of untreated parathyroid adenoma.

**Keywords:** Tc99m-MIBI, radiopharmaceutical, diagnostic tool, sensitivity, scintig

# PHARMACEUTICAL SERVICES AND PROTECTIVE MEASURES DURING THE PANDEMIC IN COMMUNITY PHARMACIES IN THE R. OF KOSOVO

Jeton Gutaj<sup>1\*</sup>, Jehona Zogaj<sup>2</sup>

<sup>1,2</sup>Ministry of Health – Republic of Kosovo, Pharmaceutical Inspectorate

jeton\_gutaj@hotmail.com

**Abstract:** On January 30, 2020, the World Health Organization declared a public health emergency in response to the COVID-19 pandemic caused by a new coronavirus called severe acute respiratory syndrome coronavirus-2(SARS-CoV-2). The disease appears to have originated in a seafood market in Wuhan, where wild animals, including marmots, birds, rabbits, bats, and snakes, are traded illegally. Coronaviruses are known to pass from animals to humans, so it is thought that the first people infected with the disease-a group consisting mainly of stall holders from a seafood market-contracted it from contact with animals. This paper aims to see what protective measures have been taken by pharmacists in pharmacies, the psychological state, concerns, and difficulties, as well as the provision of pharmaceutical services during the COVID-19 pandemic by community pharmacists in the Republic of Kosovo. The research method was a quantitative one. The target group were pharmacists (n = 48) surveyed in the Republic of Kosovo. 83.3% were responsible pharmacists in pharmacies, 68.8% were independent pharmacies, and 10.4% were pharmacies with a large network. 76.6%, or 50 prescriptions per day, were executed. 91.7% noticed that there was an increase in the flow of customers, 35.4% had not had a problem with the supply of drugs, and 36.9% thought that the lack of drugs created big problems. 10.4% were anxious, 47.9% were slightly concerned, 31.3% were able to overcome their anxiety through conversation, and 59.6% asked specific questions to figure out if they were potentially infected with COVID-19 before serving the patient. 63.8% stated that they make sure that the distance is 2 meters, with precautions taken at the pharmacy level 31.9% believe that policies exist, and specific procedures are taken, 25.5% have a protective screen, etc., the precautions taken by the pharmacy 54.1% are very satisfied. The sources of information about COVID-19 have been obtained by 25.5% from electronic sources. 56.3% of pharmacists have dispensed drug groups such as: antibiotics, antivirals, analgesics; 48.9% declare that Favipiravir was prescribed from the group of antivirals; 57.4% were prescribed cephalosporins; 47.8% dispensed dexamethasone; 10.9% were not recommended for COVID-19; 66.7% dispensed all supplements; and 93.8% state that more antibiotics have been dispensed during COVID-19 than before COVID-19.

**Keywords:** COVID-19, protective measures and pharmaceutical services.

# THE IMPORTANCE OF IMMUNOGLOBULIN G N-GLYCANS IN COLORECTAL CANCER

F Vučković<sup>1</sup>, Kujtim Thaçi<sup>1\*</sup>, E Theodoratou<sup>2,3</sup>, SM Farrington<sup>3</sup>, M Perola<sup>4</sup>, Y Aulchenko<sup>5</sup>, MG Dunlop<sup>3</sup>, H Campbell<sup>2,3</sup>, G Lauc<sup>1,6</sup>

<sup>1</sup>Genos Glycoscience Research Laboratory, Zagreb, Croatia

<sup>2</sup>Centre for Population Health Sciences, University of Edinburgh, Edinburgh, UK

<sup>3</sup>Colon Cancer Genetics Group, Institute of Genetics and Molecular Medicine,

<sup>4</sup>Department of Health, THL, Finland

<sup>5</sup>Polyomica, Groningen, The Netherlands

<sup>6</sup>University of Zagreb Faculty of Pharmacy and Biochemistry, Zagreb, Croatia

kujtimthaqi\_1@hotmail.com

**Abstract:** Colorectal cancer (CRC) is a malignant neoplasm of the colon and the rectum. CRC is still associated with poor prognosis, low survival rate and usually relatively late diagnosis. Aims and objectives: This research aims to identify IgG N-glycans biomarkers with discriminative power to predict survival in patients with CRC. Specific aim: To analyse IgG N-glycans in 760 patients with CRC and 538 matching controls. Using recently developed high-throughput UPLC technology for IgG glycosylation analysis we analysed IgG glycome composition in 760 patients with CRC and 538 matching controls. Furthermore, IgG glycome composition was analysed in 39 plasma samples collected before initial diagnosis of CRC. When analysing clinical characteristics among patients and matching controls it was found that CRC associates with decrease in IgG galactosylation, IgG sialylation and increase in core-fucosylation of neutral glycans with concurrent decrease of core fucosylation of sialylated glycans. While a model based on age and sex did not show discriminative power (AUC=0.499), the addition of glycan variables into the model considerably increased the discriminative power of the model (AUC=0.755). Our findings suggest that genetic factors influencing glycome composition could be explored as risk factors for colorectal cancer. Finally, glyco-modifications might have relevance to tumour immune-surveillance and in predicting response to monoclonal antibodies. Considering the functional relevance of IgG glycosylation for both tumor immune-surveillance and clinical efficacy of therapy with monoclonal antibodies, individual variation in IgG glycosylation may turn out to be important for prediction of disease course or the choice of therapy.

**Keywords:** Glycosylation, IgG, colorectal cancer (CRC).

# UNDERSTANDING THE CROSSTALK BETWEEN ENDOPLASMIC RETICULUM STRESS AND OXIDATIVE STRESS IN DISEASES

Pelin Telkoparan-Akılıllari

Department of Medical Biology, Faculty of Medicine, Yuksek Ihtisas University,  
Ankara, Turkey

pelinta@yiu.edu.tr

**Abstract.** The endoplasmic reticulum (ER) is a vital organel with many critical cell functions. Various intracellular and environmental factors may disrupt its function and lead to the accumulation of unfolded or misfolded proteins that cause ER stress and activate the unfolded protein response (UPR). UPR leads to disruption of intracellular calcium and redox homeostasis and mitochondrial dysfunction. When the redox is unbalanced, the antioxidant mechanism is disrupted and leads to oxidative stress. ER stress mediates oxidative stress and increases reactive oxygen species (ROS) by affecting mitochondrial function, thus causing apoptosis in various metabolic diseases including cancer. In this talk, I will discuss how ER stress mediates oxidative stress in various metabolic diseases, including cancer, and the potential development of drugs that target these integrated signaling pathways.

# ADDRESSING OXIDATIVE STRESS USING NANOTECHNOLOGY: PROMISES AND CHALLENGES

Sarmistha Saha

Department of Biotechnology, Institute of Applied Sciences & Humanities, GLA  
University, Mathura, India

sarmisthasaha.53@gmail.com

**Abstract.** An imbalance between the formation of reactive oxygen species (ROS) and the reaction of antioxidant proteins is referred to as oxidative stress. Numerous pathogenic illnesses, including persistent infections, inflammatory disorders, cardiovascular diseases, neurological diseases, and cancer, are thought to be triggered by reactive oxygen (ROS), reactive nitrogen (RNS), and reactive sulphur (RSS) species. Despite significant effort over the past few decades to translate antioxidant therapy into clinical practice, the majority of clinical trials utilizing general antioxidant therapy have failed, most likely as a result of a lack of understanding of the redox signaling pathways in health and disease. The effective use of nanocomplex systems as nano-antioxidants using nanotechnology has emerged as a potential path. The intersection of nanotechnologies with molecular biology can function to improve human health by improving the cross-link of oxidative stress and inflammation. However, understanding how to manipulate the substance to determine its function in the body and how the body will respond to this substance is necessary for the transition from laboratory investigations to clinical translation. Therefore, nanotechnology provides an efficient route to address oxidative stress-related diseases by providing tailored antioxidant administration, mitochondria protection, ROS scavenging, and improved diagnostics

# THE CONDITION OF SOME PLANTS OF PARTICULAR IMPORTANCE IN THE AREA OF MUSHTISHT

Shkëlzim Ukaj, Hyzer Rizani, Smajl Rizani

University for bussines and technology UBT - Prishtinë

shkelzim.ukaj@ubt-uni.net

**Abstract.** The Sharri Mountains were the subject of research for rare vegetation by many authors, we have focused only on the area of the Mushtishti Mountains as it lies in the southern part of Kosovo. The altitude ranges from 600 - 2000 m. In the research conducted in the period 2021-2023. during our research the focus was on medicinal and endangered plants according to IUCN criteria. The composition of the soil, the shape of the relief and the various exposures enable a great diversity of plant species.

The research is based on floristic methods: collection, herbarium and determination is done according to the criteria for determination. The medicinal plants of this area are the target of plant collectors and their condition does not look good after harvesting

Plants: *Achillea alexandri* regis and *Bornmuelleria diecki* which are Stenoendemic in a narrow area.

**Keywords:** Sharri Mountains, Herbar, *Achillea*, Mushtisht.



# ERp57/PDIA3 A PLEIOTROPIC MEMBER OF THE PDIs FAMILY

Silvia Chichiarelli

Department of Biochemical Sciences "A. Rossi-Fanelli", Sapienza University of Rome, Italy

silvia.chichiarelli@uniroma1.it

**Abstract.** Protein disulfide isomerases (PDIs) are an important cellular oxidoreductase enzyme family including several structurally related components. PDIs are involved in protein folding, catalyzing the formation and remodeling of disulfide bonds, and are mainly located in the endoplasmic reticulum (ER). The ERp57/PDIA3 has a noncanonical ER retention signal (QEDL) on the C-terminal domain and a Lys-rich nuclear localization signal, which binds with high affinity to a specific site of importin, responsible for the nuclear import process [1]. ERp57/PDIA3, found in different extracellular and subcellular locations, is involved in multiple processes [2,3]. The nuclear localization of ERp57/PDIA3 was discovered many years ago, nevertheless, its role in the nucleus is not well understood. It has been shown that ERp57/PDIA3 altered in different cancer cell lines. This protein participates in the signal transduction processes of STAT3 pathways [4,5], and binds specific DNA fragments in a melanoma cell line [6]. In respect of its localization on the plasma membrane, the ERp57/PDIA3 seems involved in EGFR signaling and internalization, as evidenced by the silencing of ERp57/PDIA3 in MDA-MB-468 cells [7] and it was identified also as an alternative cell membrane receptor for active forms of vitamin D3 that regulates some phenotypic functions and nongenomic response[8,9]. More recently it has been hypothesized as a pharmacological target in glioblastoma because ERp57/PDIA3 inhibition induced cytotoxic effects in two different glioblastoma cell lines (T98G and U-87 MG cells)[10]. Its involvement in cancer progression and other diseases suggests a potential use of ERp57/PDIA3 both as a marker and atherapeutic target. ERp57/PDIA3 is an important research target considering its various subcellular locations and its involvement in the cellular response.

# UPDATES ON MANAGEMENT OF GASTRIC CANCER IN KOSOVO

Valon Ejupi, Shpend Dragusha, Bujar Qazimi, Arianit Jakupi

Faculty of Pharmacy, UBT-Higher Education Institution, Lagjia Kalabria, 10000 Pristina,  
Republic of Kosovo

valon.ejupi@ubt-uni.net

**Abstract.** One of the leading causes of cancer-related deaths worldwide is gastric cancer. In order to choose the best course of treatment for gastric adenocarcinoma, a multidisciplinary approach is essential. Systemic chemotherapy, radiation, surgery, immunotherapy, and targeted therapy have all demonstrated efficacy in this disease. The usual cytotoxic chemotherapy for localized disease may have reached a plateau with the acceptance of triplet chemotherapy for resectable gastric cancer. Molecular subtype classification of gastric cancer is opening the door to individualized treatment. Systemic therapy approaches are becoming more and more driven by biomarkers, particularly microsatellite instability (MSI), programmed cell death ligand 1 (PD-L1), human epidermal growth factor receptor 2 (HER2), tumor mutation burden, and Epstein-Barr virus. These biomarkers enable the identification of populations most likely to benefit from immunotherapy and targeted therapy. The less differentiated histologic subtypes of gastric cancer and those without indicators of immunotherapy activity nonetheless present significant research prospects.

**Keywords:** Gastric cancer, chemotherapy, biomarkers, management

# **IC-MECHATRONICS, SYSTEMS ENGINEERING AND ROBOTICS**

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Hajrizi E. (UBT)

# **Available Power of Arduino Mega 2560 without Recourse to extern Supply**

Fatih Dincer

TU Vienna, Vienna Austria

fatihdincer@gmail.com

**Abstract.** The microcontroller family Arduino is getting more popular nowadays because of its practical handling and integrity to other systems. During conducting an experiment of controlling a humanoid robot of the type Robotis Bioloid not with its original microcontroller but with an Arduino Mega 2560 instead the power limits of it were found.

**Keywords:** Arduino Mega 2560, Power Limitation, Current Supply.

# A Prototype Car Display Control System with Motion and Seat Belt Sensing

Luan Mulaku, Arxhend Jetullahu

UBT – Higher Education Institution, Faculty of Mechatronics Engineering, Pristina, Kosovoluan.Mulaku@ubt-uni.net

arxhend.jetullahu@ubt-uni.net

**Abstract.** The article presents a prototype for a car screen lock system that promotes seat belt use while also regulating screen access. The system incorporates motion detection, seat belt monitoring, sound alarms, and screen lock function, and serves as a conceptual model for potential integration into real-world automotive systems. The prototype simulates automotive using motion detection and continuously examines seat belt fastening status, promoting the use of seat belts as an important safety measure. Built-in auditory alerts give the driver with aural reminders, stressing safety compliance. When the car is moving and the seat belt is fastened, the screen is unobstructed, otherwise is locked with an advisory message. The significance of this approach rests in reducing the significant risks associated with noncompliance. Failure to wear a seat belt not only raises the chance of serious injury in a crash but also encourages distractions such as mobile phone use, missing navigation directions, and ignoring vital notifications, jeopardizing driver focus and overall road safety. The research as a future path includes seamless integration with genuine automobile sensors and displays while following safety rules in order to provide a practical and safe in-vehicle display control system.

**Keywords:** Screen lock system, automotive, seat belt security, display control, sensors, microcontroller, driver safety.

# Regression testing – test prioritization based on version control

Melina Lushaku, Ermira Daka

UBT – Higher Education Institution, Pristina, Kosovo

ml45784@ubt-uni.net

ermira.daka@ubt-uni.net

**Abstract.** Software testing is a crucial process in the whole software development life cycle status (SDLC). The primary goal of software testing is to ensure that application meets its specified requirements, functions correctly, and is reliable, secure, and user-friendly. During all the time that the software is in development, new problems can appear even in the existing parts. Regression testing is a type of software testing that is conducted to ensure that recent code changes or updates to a software application do not negatively impact existing functionality. However, since testing will always grow as development increases, prioritization of tests is crucial at some point. Regression test prioritization is one of the methods that determines the order in which test cases should be executed based on their importance and likelihood of detecting defects. What helps in prioritizing tests is the use of control versions because it shows us the history of code changes. This article shows the importance of including version control in the regression testing process, and how it helps to optimize the number of test cases that need to be done.

**Keywords** Regression testing, Test prioritization, Version control, SDLC- software development life cycle status.

# Optimizing Welding Parameters of Submerged Arc Welding based on Hardness in S235JR Construction Steel

Fidan Smaili<sup>1</sup>, Hajredin Ibishi<sup>2</sup>

<sup>1</sup> UBT – Higher Education Institution, Faculty of Mechatronics Engineering, Pristina, Kosovo

<sup>2</sup>ELSAM - Heat Exchanger and Steel Construction Company

fidan.smaili@ubt-uni.net

**Abstract.** This paper details the influence of the welding parameters of submerged arc welding in the hardness of welded joint of S235JR construction steel. The planned experiment work is conducted in the semiautomatic submerged arc welding machine and the contribution of each factor has been considering, such as: (intensity, voltage, trolley welding speed, diameter of the wire, wire speed, cooling speed of the welded joint, OK Flux 1071, chemical properties of material and wire). The results of the present investigation indicate that the welding voltage, current intensity and environment of cooling of the welded joint are the most significant factors that controls the hardness of bead. Optimal results were obtained by using the tension of 37 V, intensity of 350 A at a trolley speed of 6.0 mm/s and wire diameter 2.4 mm process, and how it helps to optimize the number of test cases that need to be done.

**Keywords:** S235 Steel, Submerged Arc Welding, Welding Parameters, Weld bead, Hardness.

# The impact of digital transformation on industrial automation

Saranda Demolli

UBT – Higher Education Institution, Faculty of Mechatronics Engineering, Pristina, Kosovo

saranda.demolli@ubt-uni.net

**Abstract.** This article discusses and analyzes the impact of advanced digital technologies on production automation. Production automation started from the First Industrial Revolution, but its level and performance has changed radically with the implementation of enabling and innovative technologies that represent the so-called fourth industrial revolution. The purpose of this research is to explore and identify the level of impact of new technologies on production automation, with increasing focus on business opportunities and the challenges that manufacturing businesses face in implementing digital technologies. This goal has been achieved through the qualitative objective, respectively the research of the situation in the automated production industry and through the quantitative objective, respectively the research in the regional market of a developing country. The results show that there is a good level of automation in the surveyed companies, but that the adequate staff for the implementation and use of digital technologies is not yet at the desired level.

**Keywords:** Automated production, Digital technologies, AI, VR/AR, Cloud, 3D printing, Machine learning.



# Impact of Camera Hardware on the Performance of Convolutional Neural Network Models in Machine Vision Applications

Ron Kasemi

UBT – Higher Education Institution, Faculty of Mechatronics Engineering, Pristina, Kosovo

roni.kasemi@ubt-uni.net

**Abstract.** In the rapidly growing field of artificial intelligence (AI), machine vision is an important area with applications ranging from agriculture to healthcare and improving people's quality of life. A critical factor in the effectiveness of AI models, especially in machine vision, is the complicated interplay between hardware and software parameters. This study addresses the performance metrics of a Convolutional Neural Network (CNN) model, focusing on the influence of different camera hardware. Since the CNN model used in this case is tailored for regression-based predictions, its evaluation depends on the number of predictions made over a period of time. Preliminary results highlight that camera hardware attributes can increase the prediction rate by achieving more than 10 predictions within a 15-second window, with this rate escalating over longer durations. These findings clearly indicate that the performance of the CNN model can be improved simply by selecting an appropriate camera model, without requiring changes to the CNN parameters or training datasets.

**Keywords:** Convolutional Neural Network, Machine Vision, Regression

# Application of 3D Technology in Accessories and Fashion Design

Agnesa Sopaj

<sup>1</sup> UBT - Higher Education Institution, Pristina, Kosovo

as69585@ubt-uni.net

**Abstract.** This article delves into 3D Printing's multifaceted applications in fashion, emphasizing its potential for intricate parametric designs and personalized clothing, reshaping the industry. The article includes a practical case study demonstrating iLogic's efficient use to automate part attribute determination and conduct comprehensive stress analysis on a 3D-printed keychain.

**Keywords:** 3D Printing Technology, Parametric Design, Inkjet Printing, Fashion and Textile, Accessories

# 3D Printing of the Bike Frame Prototype Luca Collini

Betim Shabani\* · Xhemajl Mehmeti

<sup>1</sup>UBT – Higher Education Institution, Faculty of Mechatronics Engineering, Pristina, Kosovo

betim.shabani@ubt-uni.net  
xhemajl.mehmeti@ubt-uni.net

**Abstract.** Design is the phase where abstract ideas tend to end up with form and function. There have been a lot of improvements in the last decade in design for 3D Printing. From an advanced manufacturing point of view, 3D Printing is a promising technology to come up with prototypes and products whose geometry is relatively complex, and in some cases when the parts are integrated from several pieces to one. This case can be recognized in the bike frame, which is our case study as an example. The problem that needs to be questioned is: Can we 3D Print the bike frame as a whole? The strengths and weaknesses of actual development and future research will be presented in this article.

**Keywords:** 3D Printing, Bike, Frame, Design, Complex, Integration.

# IC-PSYCHOLOGY

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Editors:

Hajrizi E. (UBT)

# The influence of social media on eating habits

Diana Sejdiu Shala, Laura Binxhija Qeska and Florent Bojku

Department of Psychology, UBT – Higher Education Institution, Lagja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

diana.sejdiu@ubt-uni.net

laura.binxhija@ubt-uni.net

fb45809@ubt-uni.net

**Abstract** This research is about the impact of social media and influencers on eating habits. The study's main purpose is to examine social media's impact on nutritional habits.

The object of the study was 50 citizens of Peja and the region, regardless of age and gender, who have encountered at least one social media influencer that has had a positive or negative impact on their eating habits. 50 citizens of Peja and the region participated in this research. From the total number of citizens in terms of gender, 40.0% are male and 60.0% are female. For the realization of this research, the survey was used. The data were analyzed with the Microsoft Excel package. Based on the descriptive data, we can conclude that social media has a negative impact on eating habits. Exposure to unrealistic body standards and unhealthy food content on social media can lead to disordered eating habits, such as restrictive dieting and binge eating. Social media can also promote unhealthy eating habits by encouraging the consumption of processed and high-calorie foods.

**Keywords:** social media, influencers, eating habits

# Psychological effects and therapeutic role of group counseling in women diagnosed with breast cancer

Anora Kroj

krojanora3@gmail.com

**Abstracts.** This paper focuses on the implementation of a counseling technique such as group therapy for women diagnosed with breast cancer, the focus is on generating a better emotional coping strategy in their tumor disease. The research focuses on the psychological effects of women diagnosed and being treated in Tirane, Albania. According to studies, counseling group therapy is very effective in such medical pathologies that are accompanied by emotional and mental health disorders. Diagnosing and treating cases is a psychological challenge for these women, and precisely starting from this, it is very positive to include them in therapy to allow their general well-being and better coping with the disease. Next to the multidisciplinary commission of limited ability, 6 patients were randomly selected in a convenient sample, from which 5 of them we received the informed consent to be part of the counseling group. It is worth mentioning that we are applying group therapy, the process is continuing and their reactions are fantastic and we have gone beyond the expectations, they report very good results after the session ends. I emphasize that this work was a simple humanitarian idea to help a little bit every woman who is fighting with breast cancer, but I have the impression that it is taking the measures of a very important project in the future. That's exactly why I decided to name it "**BEYOND OCTOBER**".

**Key words:** psychological effects, counseling group therapy, women diagnosed with breast cancer, "Beyond October".

# The Role of the Adoption Procedure in the Psychological Well-being of Adopted Children and Adoptive Parents

Nerenxa (Alia) Dranga

aliajneri@gmail.com

**Abstract.** This work focuses on the emotional and psychological development of adopted children, the challenges they may encounter in their journey of coexistence with their adoptive parents, and during and after the adoption process. The study primarily centers on the development of the adoption procedure in Albania. The findings highlight that adoption is both a legal and psychological process, characterized by high sensitivity, involving adoptive parents, adopted children, and relevant institutions as third parties. This process requires special care and an appropriate approach to improve the overall well-being of adopted children and adoptive parents. More than just the goal of finding a family for every declared abandoned child, adoption is a mission that involves multiple stakeholders and demands care and delicacy at every step, with the ultimate aim of successfully completing the procedure, starting with the training of prospective adoptive parents and ending with the placement and integration of the child into the new family environment. During the work, a summary of the adoption procedure will be created, emphasizing the emotions, challenges, and opportunities experienced by those involved in this process. The work aims to stimulate discussions about the impact of the adoption process on the psychological well-being of adopted children and adoptive parents. The topic of adoption and the psychological state of adopted children is important to address in order to understand how we as a society or professionals can provide the proper care and support for this unique group of children and their parents.

**Keywords:** adopted children, adoptive parents, adoption procedure, psychological state, adaptation period, post-adoption period.

# FROM BEHIND THE SOCIAL MEDIA SCENE TO MENTAL HEALTH AND TRAFFICKING

<sup>1</sup> Mirlinde Bilalli, <sup>2</sup> Elmedina Shabani

<sup>1</sup>University for Business and Technology – UBT, Prishtina, Kosova<sup>2</sup>The Savant center Skopje, North Macedonia

<sup>1</sup>{mirlinde.bilalli@ubt-uni.net},

<sup>2</sup>{elmedinash99@autlook.com}

**Abstract. Introduction:** Social media has become an inevitable part of our lives, accompanying us in the hustle and bustle of our daily routines and engaging people of all ages. It is commonly acknowledged that young people make up the majority of social media users. The frequent use of social media among young individuals can lead to anxiety, depression, and stress. Aim of work : To provide some possible explanations and offer literature for individuals at risk of this addiction.

**Materials and Methods:** A study was conducted with over 100 participants who completed a questionnaire available on Google Forms, accessible online to a wide range of individuals across different platforms.

**Results and Discussion:** The surveyed population consisted of 42% males and 57% females, all of Albanian ethnicity. The majority of respondents in this group admitted to spending more than 7 hours on social networks, representing 52% of the individuals. They also acknowledged that social media usage is negatively affecting people's relationships. **Conclusion:** The research results have shown a significant negative impact of social media on mental health.

**Keywords:** social networks, addiction, mental health



# Fostering Employee Well-being: Exploring the Interplay of Coworker Support, Work Engagement, Burnout, and Job Performance in Organizational Contexts

Valdrin Krasniqi & Eglantina Kraja Bardhi

Department of Psychology, University for Business and Technology - UBT, Pristina, Kosovo

{ valdrin.krasniqi@ubt-uni.net }

{ eglantina.kraja@ubt-uni.net }

**Abstract.** This study explores the relationships among coworker support, work engagement, burnout, and job performance within the framework of the Job Demands-Resources (JD-R) model. The primary examination driving this research was centered on understanding the influence of coworker support on work engagement and burnout and, consequently, its impact on job performance. Through a cross-sectional analysis involving 178 employees in the energy sector in Kosovo, encompassing both technical and non-technical staff, this research utilized SPSS to scrutinize the data. In alignment with the JD-R model, this study explored how job characteristics shape work engagement, employee burnout, and ultimately, job performance within organizational settings. The findings of this study substantiate the hypothesis that coworker support positively correlates with heightened work engagement, while concurrently serving as a buffer against employee burnout. Importantly, the research underscores the pivotal role of work engagement in enhancing job performance, while conversely, illuminating how burnout detrimentally impacts it. The significance of this research lies in its contribution to in-depth understanding of the relationship dynamics between coworker support, work engagement, burnout, and job performance. These insights offer actionable strategies for organizational leaders and human resource professionals, empowering them to cultivate conducive job environments that mitigate burnout and optimize job performance among their workforce.

**Keywords:** coworker support, work engagement, burnout, job performance.

# The Role of the Big-Five Personality Model in Explaining Support for EU Membership: The Case of Kosovo

Denis Çelçima

Department of Psychology, University for Business and Technology  
deniz.celcima@ubt-uni.net

Frederik Dara

Department of Applied Mathematics, University of Tirana  
fredrik.dara@fshn.edu.al

Eglantina Kalluçi

Department of Applied Mathematics, University of Tirana  
eglantina.xhaja@fshn.edu.al

Markela Muça

Department of Applied Mathematics, University of Tirana  
markela.muca@fshn.edu.al

Ridvan Peshkopia

Department of Political Science, University for Business and Technology  
ridvan.peshkopia@ubt-uni.net

Violeta Zefi

Department of Psychology, University for Business and Technology  
violeta.zefi@ubt-uni.net

**Abstract** The consolidation of the Big Five personality model during the 1990s unleashed enormous multi-disciplinary 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. 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 a probability sample of public opinion survey data that we collected in winter 2020-2021 in 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

Big-Five personality model, EU membership conditionality, trust in institutions, support for EU membership, Kosovo

# Born that Way: The Effects of the Big Five Personality Traits in People's Ideological Affiliation

Frederik Dara

Department of Applied Mathematics, University of Tirana  
erik.dara@fshn.edu.al

Markela Muça

Department of Applied Mathematics, University of Tirana  
markela.muca@fshn.edu.al

Ridvan Peshkopia

Department of Political Science, University for Business and Technology  
ridvan.peshkopia@ubt-uni.net

**Abstract** The relationship between personality and ideological affiliation has been intriguing political psychologists for over the last 100 years. Notwithstanding various approaches to the topic and reinvigorated efforts to predict ideological affiliation with personality traits, literature has managed to build consensus neither on their association nor any causality of personality on ideological inclination. There is a growing body of political psychology literature confirming that distinct pattern of personality traits could predict ideological positions. Arguably, predicting individual ideological inclination must account for personality traits because the basis of distinction between liberalism and conservatism “is ultimately not political, sociological or economic, but psychological.” We identify three limitations of the existing literature on the relationship between personality and ideology: the unidimensional linear perception of respondents’ self-reported ideological inclination, while a two-dimensional measurement along economic and social issues would be a more accurate approach; that literature tends to reduce personality only to its core characteristics, personality traits, overlooking surface characteristics such as motives, social attitudes, values, and beliefs that all interact within varied social contexts; most of the research about the relationship between personality and political attitudes, behavior and beliefs relies on data from developed countries. Cross-country research on the association between personality and political ideology has revealed significant prediction differences from country to country. For instance, in Central and Eastern European Countries (CEECs), people’s Left-Right perception runs more along people’s experiences during communism than along the economic/moral divide typical for Western societies. However, studying the relationship between personality and political ideology in the CEECs becomes important because the idiosyncratic structure of its transitioning societies as well as ideology’s place and role in those societies. We take our research to Kosovo, where politics have always surrounded not the Left-Right division but the Albanian- Serbian ethnic division. In such countries, measuring ideological inclination as responses to topical questions might be a better strategy than the Left-Right self-reporting scale. We use both these measurements. In Kosovo, we inquire the association between individual personality traits and their ideological inclinations measured as the self-reported position in the 11-point left-right scale, an ideological test, and a political compass adjusted according to country’s specific understanding of the topics. We test our hypotheses with public opinion data from a representative survey sample that we collected in winter 2019-2020.

**Keywords** Big Five personality model, ideologic affiliation, societies in transition, Lef-Right division, Kosovo

# Political Trust and Attitudes toward Government Anti-COVID Policies

Frederik Dara

Department of Applied Mathematics, University of Tirana  
erik.dara@fshn.edu.al

Eglantina Kalluçi

Department of Applied Mathematics, University of Tirana  
eglantina.xhaja@fshn.edu.al

Ridvan Peshkopia

Department of Political Science, University for Business and Technology  
ridvan.peshkopia@ubt-uni.net

**Abstract** Political trust could be defined as trust in institutions and the political process, and it includes trust in elites, politicians and political parties. Arguably, political opinions and ideological labels are stimuli to which the Big Five personality traits shape responses, and external environmental factors shape the meaning of these stimuli. By the same token, we argue that political trust is a certain political attitude impacted by both personality and external stimuli. As political attitude, political trust rests between personality, identity and values, emotions and the cognitive system. In that position between personality and external factors, political trust could serve as a characteristic adaptation, middle-level unit that is the product of both personality traits and environmental factors. This scheme offers a platform to test aggregate-level relationships between Big Five personality traits and political outcomes, and helps to understand how environmental factors moderate these relationships. We use the Big Five personality model to explain trust of the citizens of Kosovo on two sets of entities: politicians, institutions, and the judiciary systems of both Kosovo and the European Union. We analyze a probability sample of public opinion survey data that we collected in winter 2020- 2021 in Kosovo through the cellphone random digit dialing (RDD) technique.

**Keywords** Big Five personality traits, political trust, EU membership, trust in EU and Kosovo politicians, trust in EU and Kosovo institutions, trust in EU and Kosovo judicial systems

# Protective measures or shelter-in-place: Personality and attitude toward anti-pandemic policies in Kosovo

Frederik Dara

Department of Applied Mathematics, University of Tirana  
fredrik.dara@fshn.edu.al

Ridvan Peshkopia

Department of Political Science, University for Business and Technology, Prishtinë, Kosovë  
ridvan.peshkopia@ubt-uni.net

Edin Pula

Department of Political Science, University for Business and Technology, Prishtinë, Kosovë  
ep40180@ubt-uni.net

**Abstract** The extant research on the role of personality traits in attitudes toward COVID-19 pandemic and policies to counter it have produced little consensus over the impact of specific traits on such attitudes. In search of a better understanding of the role of personality traits on attitudes toward anti-COVID policies, we apply an innovative research design to investigate the role of personality traits from the Big Five model on preferences toward anti-COVID protective measures and shelter-in-place as well as between them. We tried to capture attitudes along three policy preferences: governmentally/socially enforced protective measures/shelter-in-place; acceptance/appreciation of protective measures/shelter-in-place; and dismissive approaches to protective measures/shelter-in-place. We compared those attitudes between two randomly selected groups, with respondents in one of them being asked their agreement with anti-COVID protective measures, and the respondents of the other one being asked their agreement with the shelter-in-place policy. Openness positively predicts agreement both protective measures and shelter-in-place in all three topics, but predicts a statistically significant drop in agreement with shelter-in-place in all three topics. Both Agreeableness and Conscientiousness predict similar behavioral patterns: whereas they positively predict agreement with both protective measures and shelter-in-place, they also negatively predict agreement with governmentally/socially enforced shelter-in-place. By the same token, both Extraversion and Emotional Stability predict similar attitudinal patterns: they predict both disagreement with governmentally/socially imposed shelter-in-place, and opposition to dismissive attitudes toward anti-COVID protective measures and shelter-in-place. However, differently from Extraversion, Emotional Stability positively predicts acceptance/appreciation of both protective measures and shelter-in-place. We test our hypotheses with public opinion data from a representative survey sample that we collected in winter 2019-2020. The findings are relevant for both understanding the role of personality traits in attitudes toward policy messages, and for policy makers in their effort to crafting policy messages that the public would accept better.

**Keywords** Big-Five personality traits, anti-COVID policy, governmentally/socially enforced protective measures/shelter-in-place, acceptance/appreciation of protective measures/shelter-in-place; and dismissive approaches to protective measures/shelter-in-place

# The Psychological Roots of Acquiescence and Resistance: How Personality Traits Explains Public Attitudes toward Governments' Responses to COVID-19

Frederik Dara

Department of Applied Mathematics, University of Tirana

frederik.dara@fshn.edu.al

Ridvan Peshkopia

Department of Political Science, University for Business and Technology

ridvan.peshkopia@ubt-uni.net

Violeta Zefi

Department of Psychology, University for Business and Technology

Violeta.zefi@ubt-uni.net

**Abstract** The advent of the SARS-CoV-2 pandemic unleashed a plethora of government responses to that public health crisis, as well as public perceptions and reaction toward both the disease and government policies to prevent and control its spread. Emerging research in behavioral sciences is trying to explain such attitudes from various perspectives. A body of literature has tried to explain public attitudes toward both the pandemic and government measures to prevent and control it with people's socioeconomic features such as by age, gender, race, employment status, essential worker status, income, and being a parent. Other research has focused on the effect of personality traits in people's fear from and protection against COVID-19. Yet other research has pointed to the role of political attitudes, beliefs and orientations as explanatory factors of people's attitudes toward both the pandemics and government policies to prevent and control it. Our efforts rest on the old yet unsettled debate on what affect human behavior. One camp emphasizes the role of situational. The other camp stresses the role of biologically-rooted personality traits, more recently formulated as the Big Five personality traits in human behavior. The SARS-CoV-2 pandemic and governments' reactions against it generated a wide array of public attitudes, spanning from panic toward the disease and total obedience with governments' measures to combat it to indifference toward the risk to open challenges against governments' anti-Covid-19 efforts. Such a milieu would represent a nice setting and offer new opportunities to revisit the situational/environmental versus psychological debate and investigate which factors mostly affect and better explain people's behavior both toward the pandemic and governments' efforts to prevent and control it. We investigate the role of three sets of variables, the Big Five personality traits, political trust and socioeconomic variables to model their role on people's attitudes toward government's responses against COVID-19. Whereas the socioeconomic factors and the Big Five personality traits represent the two sides of the already raging situational/environmental versus psychological debate, the political trust factors represent something in the middle, since belief systems are informed from both personality traits and life experiences. Therefore, interjecting them into the debate might help to find some middle ground between the situational/environmental factors and personality traits. We test our hypotheses by relying on a random digit dialing (RDD) cellphone public opinion survey, which included an experimental research design, that we conducted in Kosovo during the fall 2020. Our experiment randomly divided respondents in two groups asking the same set of questions, with one of them asked about their attitudes government's "protective measures" and the other one primed with "lockdowns" rather than "protective measures." The experiment's purpose is to investigate if there is any response difference between both sets of questions, and if yes, what role the three sets of hypothesized factors, the socioeconomic, the personality and the belief system (political trust) factors play in such response differences.

**Keywords** Big-Five personality model, government responses to the COVID-19 pandemic, political trust, protective measures, lockdowns, Kosovo

# Metric characteristics of the scale for measuring learning styles in the student population

Qufli Osmani, Delvina Beka

UBT-Higher Education Institution, Faculty of Psychology

Qufli.osmani@ubt-uni.net  
delvinabekaa@gmail.com

**Abstract.** The purpose of this research was to verify the construct validity of the learning styles questionnaire in the student population. The learning styles questionnaire is based on the principles of Honey and Mumford's theory of the universal content and structure of learning styles. The research was carried out on a sample of 437, of which 145 are school children and 292 are students of social and natural sciences. Students are aged 15–23 years. To measure learning styles, the learning styles questionnaire (Honey & Mumford, 1986) was used, which measures four specific styles (pragmatists, reflectors, activists, and theorizers) through 40 items (ten for each style in particular). Applying exploratory factor analysis, three interpretable factors were extracted, and the structure of values in two-dimensional space was checked using the Multidimensional Scaling (MDS) method. The resulting structure does not correspond to the expected structure according to Honey & Mumford's theory, i.e., the items were grouped into three higher-order values: theorizing style, reflective style, and pragmatic-activating style. Inner consistency of the scale expressed through Alfa Kronbah, is  $\alpha=0,88$ . Moderate to high correlations were obtained between items. Analysis of variance and post hoc analysis did not verify differences in the context of learning styles between dominant learning styles in secondary and higher education, as well as insignificant gender differences in the context of learning styles. The theorist's style and the reflector's style remain the dominant learning options even during studies. The obtained findings confirm the validity of the questionnaire for the assessment of learning styles and show its applicability to the population of students and those of secondary schools for the purpose of assessing learning styles.

**Keywords:** learning styles, pragmatist, reflector, activist, theorist, reliability

# Which executive functions predict semantic fluency in preschoolchildren?

Fatbardha Qehaja Osmani

Department of Psychology, UBT – Higher Education Institution, Lagja Kalabria, 10000 p.n., Prishtinë,  
Kosovo

fatbardha.osmani@ubt-uni.net

**Abstract** Semantic Fluency (SF) increases with age, along with the enrichment of the lexicon and the strategies to access it. Executive functions (EF) are among the cognitive processes that play an essential role in controlling lexical access. Nevertheless, which EF, namely inhibition, working memory and cognitive flexibility, are specifically tapped by SF during preschool years, when these basic EF components are developing and differentiating, is still unknown. The study has a two-fold aim: 1. to analyse the relationship between EF and SF in preschool children, 2. To investigate the mediating effect of EF in the effect of age on SF. 333 typically developing preschoolers (M age=57.15; SD=10.24; months range=33-74) were assessed with a SF task and EF tasks measuring the main EF basic components. Results showed that during preschool, the effect of age on the SF task performance correlated with the improvement of several EF components: response inhibition, working memory and cognitive flexibility were significant predictors of SF, explaining 27% of variance and all mediated the relationship between age and performances in SF. This study supports the importance of considering cognitive control processes at preschool age as they underpin important competencies for the child's development, such as the ability to quickly access vocabulary.

**Keywords:** executive functions, inhibition, working memory, cognitive flexibility, semantic fluency, preschoolchildren



# The Impact of social media on psychological well-being and social comparison on nursing students in UBT

Anita SADIKAJ<sup>1 2</sup>; Orhideja SURBANOVSKA<sup>2</sup>; Rinor BERISHA<sup>3</sup>, Zehra SAITI<sup>2</sup>

<sup>1</sup>UBT (University for Business and Technology) – Higher Education Institution

<sup>2</sup>Ss Cyril and Methodius University in Skopje; Faculty of Philosophy – Skopje

<sup>3</sup>Family Medicine Center - Suharekë

surbanovska@yahoo.com; anita.sadikaj@ubt-uni.net; rinor.berishaa@gmail.com; zehra340@outlook.com

**Abstract** Social networking sites are now essential in daily life. In the ever-evolving landscape of communication, social media has emerged as a dominant force that shapes how nursing students connect, share, and perceive ourselves and others. While these platforms offer unprecedented opportunities for virtual interaction, they also raise important questions about their influence on nursing students' psychological well-being and the phenomenon of social comparison. The aim of this study is to gain a contemporary understanding of the impact of social media on students' psychological well-being, focusing on aspects such as stress, anxiety and depression, and the phenomenon of social comparison.

**Methodology:** Cross-sectional survey was carried out on a sample of 128 nursing students at University for Business and Technology (UBT). Participants were recruited using a convenience sampling technique in which questionnaires were sent through a link to the targeted population. The questionnaire included information on demographics, social media use, social comparison, and a section on standard tools for Depression, Anxiety, and Stress (DASS-21), and the Iowa-Netherlands Comparison Orientation Measure (INCOM) to measure social comparison orientation. The data were analyzed by using SPSS.

**Results:** On this research participated 128 respondents of the online survey, 49 (38.3%) were male and 79 (61.7%) were female. The mean age was 19.8 years. Most of students were in the second year of studies 74 (57.8%). The respondents several times a day 113 (88.3%) check social media and, most of the respondents spent more than 180 minutes per day at social media. WhatsApp and Instagram were the two platforms that all participants reported to have access on them, 126 (98.4%) of respondents reported that are using Snapchat, and 125 (97.6%) of them reported to have TikTok. Level of anxiety is 15.78 which indicates “extremely severe”, depression is 12.77 which indicates “severe”, and the mean value of stress is 14.25 which indicates “severe”, too. Psychological well-being had a negative relationship between social comparison, and social media platforms.

**Conclusion:** Uses of social media is widespread among nursing students and negatively affects their mental health and social comparison.

**Keywords:** social comparison, psychological well-being, social media, nursing, students.

# The No-Self Thesis: Counterarguments from Abnormal Psychology

Elma Berisha

Ibn Haldun University, Istanbul 34480, Turkey

elma.berisha@stu.ihu.edu.tr

**Abstract** The no-self thesis is said to originate in David Hume's (1739) "bundle theory of self," questioning the human self as a mere bundle of fleeting perceptions without ontological reality. In contemporary discourse, the self is sandwiched between top-down and bottom-up reductionisms: those with biological and cognitive arguments that reduce the self to a lower, ontological level, on the one hand, and those who hold cultural-linguistic constructionist positions, on the other hand, reducing the self to a higher level. In both cases, self reductionism is a prelude to complete self elimination. On these conceptions, what we call "self" may be nothing other than an unintended by-product of brain processes. Nevertheless, a cursory literature review suggests that the self firmly remains indispensable to almost every contemporary field of inquiry. Research and publications on the topic of the self have increased significantly in recent years across a number of disciplines. This paper aims to offer insights into the question of the self and its realities from the perspective of Abnormal Psychology. Although conventional Psychiatry is not directly invested in exploring the concept of "self" per se, the elaborate symptomatology and in-depth treatment of disorders in practice is indispensably linked to patients' sense of self. In fact, a wide range of psychological and psychiatric disorders nowadays are increasingly being formally re-defined in terms of the "self". Above and beyond to what has come to be known as the "new disorders of the self", relevance of the self applies to classic categories of dissociation, autism, schizophrenia, personality disorders, and more. The pathological alternatives to a healthy sense of self are abundant, and no effective psychotherapeutic intervention can be imagined without the concept of self.

**Keywords:** self, abnormal psychology, depersonalization, personality disorders, dissociation, schizophrenia

# The interaction of gifts and morality in the creation of personality

Ejona Icka

Department of Psychology, University for Business and Technology - UBT, Pristina, Kosovo

{ejona.icka@ubt-uni.net}

**Abstract.** Introduction: In the complex tapestry of human existence, two fundamental aspects shape our journey through life: our innate gifts and talents, and the moral compass that guides our actions and decisions. These two facets, giftedness, and morality, are often perceived as distinct realms, yet their interaction is a compelling subject of exploration.

The aim of the study is the clarification of the interactions between those two very common components during personality development.

Methodology: Through the review of the relevant literature in this field, we will present the main connections between these two notions to make it clear to the audience how much and how talent and morality play a role in the creation of personality.

Expected results: Through this paper, we will provide contemporary facts and data that clearly reflect the role of each of these components in personality development as well as the connections between them.

Conclusions: The data from the abundant literature in this field undoubtedly emphasizes the connection between these two factors in the creation of personality.

**Keywords:** Gifts, Morality, Personality

# Motivation-stimulation of psycho-social energies for high educational achievements in teenagers

First Author <sup>1</sup> Denis Çelçima and Second Author<sup>2</sup>: Emrush Thaçi and Diana Sejdiu

Department of Psychology, UBT - Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Republic of Kosovo

deniz.celcima@ubt-uni.net  
emrush.thaqi@ubt-uni.net  
diana.sejdiu@ubt-uni.net

**Abstract.** Purpose: The study builds conceptualization of stimulating psycho-social energies through the relationships between teachers and students. This incentive is essential for developing a productive and successful learning process. It also helps in the high learning achievements of students. The study includes numerous types of research about motivation, psycho-pedagogical approaches, and building teacher-student relationships. Design/Approach/Methods: The study builds conceptualization of stimulating psycho-social energies through the relationships between teachers and students. This incentive is essential for developing a productive and successful learning process. It also helps in the high learning achievements of students. The study includes numerous types of research about motivation, psycho-pedagogical approaches, and building teacher-student relationships. Findings: During the lesson, the teacher must keep the students focused and attentive. This is achieved through the enthusiasm they must display. Enthusiasm is the strength and interest of the teacher during the lesson. This enthusiasm affects students' results and involves them in the learning process. In this way, students feel more motivated. This motivation is the potential energy toward achievements. Discussion: This study sheds light on the importance of motivation in the learning process. This topic is of interest to policymakers and educators to build a curriculum that fosters the development of elements that stimulate psycho-social energies. Furthermore, it is essential to understand motivation's role in high academic achievement and our daily activities.

**Keywords:** relationships, student, teacher

# Mental Health Awareness in Kosovo: Perceptions, Knowledge, and Barriers

Violeta Zefi<sup>1</sup>, Anduena Dibrani<sup>2</sup> & Kaltrina Rrafshi<sup>3</sup>

<sup>1, 2, 3</sup> University for Business and Technology, Faculty of Psychology, Lagjja Kalabria  
10000 Prishtinë, Kosovo

<sup>1</sup> {violeta.zefi@ubt-uni.net},  
<sup>2</sup> {ad58035@ubt-uni.net},  
<sup>3</sup> {kr58831@ubt-uni.net}

**Abstract.** Mental health is integral to our overall well-being and profoundly affects our quality of life. This study investigates the attitudes, perceptions, and understanding of mental health among the Kosovo population. For an in-depth analysis, a quantitative methodology was implemented using an online self-reporting questionnaire. Many questions were adapted from the Tianjin Mental Health Survey (TJMHS) and the Mental Health Literacy Scale (MHLS). The respondents spanned a wide age range, from 15 to 80 years old. Our findings revealed no significant differences in mental health perception and knowledge between males and females. Similarly, no considerable disparities were observed across different age groups concerning their understanding and perspective on mental health. This study enriches the current literature on mental health awareness by highlighting the perceptions of the Kosovo population.

**Keywords:** mental health, perception, knowledge, barriers, professional help.

# Sexting: Insights from Emerging Adults in Kosovo

Violeta Zefi<sup>1</sup>, Drenushë Krasniqi<sup>2</sup> & Elona Sopa<sup>3</sup>

<sup>1,2,3</sup> University for Business and Technology, Faculty of Psychology, Lagjja Kallabria10000 Prishtinë, Kosovo

<sup>1</sup> {violeta.zefi@ubt-uni.net}

<sup>2</sup> {dk61218@ubt-uni.net}

<sup>3</sup> {es57696@ubt-uni.net}

**Abstract.** Sexting is a commonly observed phenomenon among adolescents and emerging adults. This study delves into the perspectives of emerging adults in Kosovo regarding this behavior, with a particular focus on gender and age differences. Between May and June 2023, we conducted semi-structured online interviews with 40 participants (n=40), aged 18-25 years. Thematic analysis was employed to analyze the interview transcripts. The findings revealed that participants generally held positive views toward sexting, especially when it was consensual and involved a trusted partner. Notably, younger participants exhibited more favorable attitudes toward sexting compared to their older counterparts. In conclusion, this research contributes valuable insights to the existing body of knowledge on sexting by presenting the viewpoints of emerging adults in Kosovo.

**Keywords:** sexting, emerging adults, Kosovo, attitudes, behavior.

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# Differences in body composition between residents of elderly homes in Kosovo

Agron Thaqi

University for Business and Technology, Department of Sport and Movement Science, 10000 Pristina, Kosovo.

**Abstract.** The purpose of this study was to determine whether there are significant differences in body composition among the elderly people who live in elderly homes in two regions of the Republic of Kosovo (elderly people living in elderly homes in Pristina and Suhareka). The study involved a total of 44 people aged 54 to 89 years (Pristina n=23, Suhareka n=21). Body height, body weight, and body composition such as Body mass index, Body fat percentage, Body water, Muscle mass, Bones, Kilocalories, and Visceral Fat, analysis performed with the (Tanita BC 545 N Innerscan Segmental Personal Body Analysis) were used to assess the parameters in the study. The SPSS 26 packet was used in the data analysis. The statistics obtained were provided by descriptive statistics, T-test, and Pearson correlations. The results of the study show significant differences between of two regions on those variables: Muscle mass (Pristine 42.5%, Suhareka 48.2%); Bones (Pristine 2.2%, Suhareka 2.6%); Visceral Fat (Pristine 12.8%, Suhareka 6.7%). Correlation analysis shows that people who have a higher percentage of body water, have the lowest percentage of body mass, body mass index, body fat, and visceral fat. In conclusion, based on the results of the research, it can be observed that the compositional parameters related to daily activities that the elderly carry out during the day and the quality of life, turn out to be higher in the home of the elderly in Suhareka than in the home of the elderly in Pristina. This may be because the home for the elderly in Suhareka as a non-public home has much better living conditions for the residents who live there compared to the same category of residents who live in the public home for the elderly in Pristina.

**Keywords:** aging, body composition, condition, fat.



# The Impact of Ground Reaction Forces Across Ski Turn Phases: A Systematic Review

Era Deva

UBT College, Department of Sport and Movement Science

**Abstract. Study aim(s):** This study aims to conduct a comprehensive review of the existing literature focusing on the impact of ground reaction forces in specific phases of alpine skiing turns.

**Methods:** We carried out systematic searches on databases including PubMed, Web of Science, and Scopus, utilizing the keywords "ground reaction forces in alpine skiing." The studies encompassed in this review center on assessing how ground reaction forces influence distinct phases of the ski turn.

**Results:** Within this review, a range of research papers are covered, including assessments of alpine skiers (5 studies), three-dimensional kinematic data analysis (2 studies), and systematic reviews (2 studies). Remarkable findings encompass differences in ground reaction forces throughout distinct ski turn phases, differences between feet (inside and outside), the influence of slope steepness, and Discipline-Specific Forces.

**Conclusions:** Our analysis has provided valuable insights into the role of ground reaction forces in ski turns. It was observed that the peak of this force is most pronounced during the Steering phase, particularly in 'Steering 2.' The outside foot actively plays a role in the turning process, encountering heightened ground reaction forces, while the inside foot contributes to stability. On steeper slopes, these forces are amplified. Achieving peak ski turn performance relies on the early and smooth application of ground reaction forces.

**Keywords:** Skiing, Force, Turn, Phase, Steepness

# Relationship between 60 m sprint running and some motor tests

Abedin Bahtiri<sup>1</sup>, Alban Menxhiqi

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

<sup>2</sup>-High School "28 Nëntori", Prishtina

**Abstract.** Sprint running races are short distances races in which athletes try to run at their maximum speed throughout the entire distance of the race. The purpose of the research was to investigate the relationship between some motor tests and sprint running in 60m, in adolescent students. The sample of entities includes 110 male students 17 years of age. All the subjects were students of the "28 Nëntori" high school in the city of Prishtina. Eight motor tests were used. Pearson's Correlation was used to verify the relationships between sprint running at 60 m and motor tests. The obtained results show a statistically significant correlation at the  $p=.01$  probability level. The 60 m run has the highest correlation with the 20 m flying start test ( $r=.73$ ) and with the 5x10 m shuttle run test ( $r=.72$ ). There are also correlations with the standing vertical jump test ( $r=-.52$ ) and standing long jump test ( $r=-.39$ ).

Based on results we can conclude that Sprint running in 60 meters is in high correlation the motor tests which are indicators of explosive strength, agility and speed and all these correlations are at the level of statistical significance

0.01. While sprint running was not correlated to motor tests which are indicators of fleksibility.

# **Risk factors associated with shoulder injuries in swimmers: Asystematic review**

Jona Macula

UBT College, Department of Sport and Movement Science

**Abstract. Study aim(s):** This literature review aims to comprehensively analyze the key risk factors associated with shoulder injuries in swimmers, synthesizing existing research to provide valuable insights for injury prevention strategies and the overall enhancement of swimmer's performance and well-being.

**Methods:** Systematic searches on the Web of Science and Scopus databases were conducted using the following keywords: Shoulder injury risks in swimmers. Studies included in this review address the main risk factors that are associated with shoulder injuries in swimmers.

**Results:** This review identified the main risk factors that associate with shoulder injuries in swimmers. These insights provide valuable guidance for coaches, athletes and sports medicine professionals on improving the performance of each swimmer's, while minimizing the shoulder injuries.

**Conclusions:** In conclusion, this literature review has provided a comprehensive understanding of the multifaceted nature of shoulder injuries in swimmers and the associated risk factors. Through an in-depth discussion of various studies, we have highlighted the critical aspects that contribute to these injuries. These include the importance of monitoring training loads, maintaining optimal shoulder mobility, considering psychological factors and swim technique, and implementing effective injury prevention strategies.

**Keywords:** Swimming, strokes, injuries, shoulders, prevention.

# Differences between the two leagues in soccer players in agility tests

Nagip Lenjani

University for Business and Technology

**Abstract.** The purpose of this study is to present the differences between the two leagues in soccer players in agility tests. Therefore, in this study we have a sample of 132 participants, mainly young soccer players aged 14 years  $\pm$  6 months, of which 66 participants represented the group of football players of the elite league of Kosovo, and 66 participants represented the group of football players of the non-elite league. The test subjects applied agility tests which are: Illinois test without ball, Illinois test with ball, T-test without ball, T - ball test and 505 skill test. Through univariate analysis of variance (ANOVA) and canonical discriminant analysis, it has been proven that elite league soccer players have expressed better results in relation to non-elite league soccer players. Significant differences are also expressed at the p.0.005 significance level. As a conclusion, we can say that football players from the elite league have shown more favorable values in relation to football players from the non-elite league in the indicators of agility, as well as significant differences between the leagues have been expressed.

**Key words:** Differences, Agility, football players, League, etc.

# Dallimi në mes nxënësve meshkuj dhe femra të moshës 17 vjeçare në dietën mesdhetare dhe indeksin e masës trupore

Vjosa Zhubaj

Q.K "11 Marsi" Prizren

zhubivjosa@gmail.com

**Abstract** Sigurimi i kushteve për aktivitet fizik dhe sigurimi i ushqimit cilësor (Ushqim mesdhetar) për fëmijët derinë adoleshencën e vonë kontribuon në uljen e pabarazive shëndetësore midis popullatës së kësaj moshe. Qëllimi i punimit ishte të vërtetohet dallimi në mes të meshkujve dhe femrave të moshës 17 vjeçare në dietën mesdhetare dhe indeksin e masës trupore. Hulumtimi u krye në një mostër prej 100 të anketuarve të moshës 17 vjeçare (N = 44 femra; N=66 meshkuj). Nxënësit e përfshirë në hulumtim ishin të rregullt në Q.K "11 Marsi" në Prizren. U aplikuan tri ndryshore antropometrike: lartësia e trupit, pesha e trupit, indeksi i masës trupore dhe një ndryshore për dietë, Indeksi icilësisë së dietës mesdhetare (KIDMED) i cili përmban 16 pyetje. Të dhënat e të gjitha variablave u mblodhën përmes imelit për cdo individ. Nga përpunimi statistikor janë llogaritur parametrat themelor stiatistikor dhe analiza e dallimeve t-testi për grupe të pavarura. Analiza e t-testit tregon se në dietën mesdhetare, respektivisht Indeks (KIDMED) dhe BMI në mes nxënësve dhe nxënësve nuk është fituar dallim i rëndësishëm statistikor KIDMED - Mean dif.=-0.38;  $p>0.05$  dhe MBI - Mean dif.=1.24;  $p>0.05$ . Në lartësinë e trupit Mean dif.=12.55;  $p<0.05$  dhe peshën e trupit Mean dif.=13.24;  $p<0.05$  është fituar dallim i rëndësishëm statistikor.

**Fjalët kyçe:** KIDMED, nxënës, variabla antropometrike, t-test

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# A Comparative Analysis of Legal Restrictions Impacting Housing Prices: A Study of Kosovo and Slovenia

Visar Hoxha<sup>1</sup>, Egzonë Osmanaj<sup>2</sup>

<sup>1</sup> Faculty of Real Estate, UBT

<sup>2</sup> Faculty of Law, UBT

Visar.hoxha@ubt-uni.net

egzona.osmanaj@ubt-uni.net

**Abstract.** The purpose of this study is to undertake a comparative analysis of the laws between Kosovo and Slovenia in terms of legal restrictions that affect housing prices. The present study uses a comparative analysis of laws that impose restrictions that affect the housing prices in Kosovo and Slovenia. The research found that both countries impose similar restrictions on building regulations such as sanitation, lighting, air quality, fire safety, and materials standards. Spatial and zoning laws in both countries regulate urban containment, population growth, and municipal development plans. This study provides a novel and comparative analysis of the impact of legal restrictions on construction costs and housing prices in Kosovo and Slovenia, two countries with different levels of economic and social development but shared history in the former Yugoslavia.

**Keywords:** Comparative Analysis, Housing Prices, Legal Restrictions, Building Regulations, Spatial Laws, Zoning Laws, Urban Containment, Population Growth, Municipal Development, Construction Costs, Kosovo, Slovenia, Economic Development, Social Development, Former Yugoslavia.

# Enhancing Real Estate Management: The Transformative Role of Machine Learning in Predictive Gains and Risk Model Performance

Visar Hoxha<sup>1</sup>, Blerta Demjaha<sup>2</sup>, Veli Lecaj<sup>1</sup>, Hazer Dana<sup>1</sup>, Fuat Pallaska<sup>1</sup>

<sup>1</sup> Faculty of Real Estate, UBT Visar.hoxha@ubt-uni.net

<sup>2</sup> Real Estate Department, College ESLG blerta.demjaha@eukos.org

<sup>1</sup> Faculty of Real Estate, UBT Veli.lecaj@ubt-uni.net

<sup>1</sup> Faculty of Real Estate, UBT hazer.dana@ubt-

uni.net<sup>1</sup> Faculty of Real Estate, UBT

fuat.pallaska@ubt-uni.net

**Abstract.** Mortgage scoring models are pivotal in evaluating the risk associated with mortgages. Traditionally, these models were constructed using logistic regression. However, with the rise of machine learning, algorithms such as classification trees and neural networks have been employed. These algorithms are trained on a sample of mortgages, with the occurrence or non-occurrence of default observed. The data is then split into training and test samples, with machine learning algorithms further dividing the training sample for validation. This approach aims to determine hyperparameters that maximize performance while minimizing overfitting. Once calibrated, the model is applied to the test sample to predict default events. Despite the sophistication of machine learning algorithms, their predictive performance in mortgage scoring is comparable to logistic regression. Ensemble methods, which combine multiple models, have shown potential in enhancing predictive performance. This literature review explores the application of machine learning in mortgage scoring, comparing it with traditional methods, and discussing its implications

**Keywords:** scoring model, mortgage default, machine learning algorithms, logistic regression, receiver operating characteristic curve, neural networks



# **Surrogacy contract: A survey of attitudes of women in Kosovo**

Egzone Osmanaj, Adisa Halimi

UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, Kosovo  
Master's level student in the Civil and Property Law Program at UBT College

egzone.osmanaj@ubt-uni.net  
ah501106@ubt-uni.net

**Abstract.** This study aims to explore the attitudes of women in Kosovo regarding surrogate mothers and to identify the main reasons for which Kosovar women are for or against having a child through a surrogate mother. Thus, this study aims to examine how the surrogacy contract is created and implemented in different countries of the world. So, this study aims to understand how a surrogacy contract is created and implemented and what is the perception of Kosovar women regarding surrogacy. The instrument used in this study is the questionnaire, specifically the study analyzes the results of 250 respondents from different countries of Kosovo. The findings of this study proved that Kosovar women, mainly because of the cultural and social background, are not ready to accept surrogacy as a modern form of family creation. In conclusion, surrogacy is a sensitive topic and has a significant impact on society, therefore it is essential for any country to take into account its cultural and social background when formulating surrogacy law.

**Keywords:** surrogacy, contract, women, surrogate mothers, children, Kosovo women.

# Machine Learning in Mortgage Scoring: A Comparative Analysis with Traditional Statistical Methods

Visar Hoxha<sup>1</sup>, Blerta Demjaha<sup>2</sup> Veli Lecaj<sup>1</sup> Hazer Dana<sup>1</sup> Fuat Pallaska<sup>1</sup>

UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, Kosovo

<sup>1</sup> Faculty of Real Estate, UBT

Visar.hoxha@ubt-uni.net

<sup>2</sup> Real Estate Department, College ESLGblerta.demjaha@eu-kos.org

<sup>1</sup> Faculty of Real Estate, UBT

Veli.lecay@ubt-uni.net

<sup>1</sup> Faculty of Real Estate, UBT

hazer.dana@ubt-uni.net

<sup>1</sup> Faculty of Real Estate, UBT

**Abstract.** This paper delves into the comparative advantages of machine learning over traditional statistical methods in real estate mortgage scoring. By examining the efficiency, robustness, and productivity gains of machine learning, the study underscores its potential to transform the financial industry, particularly in mortgage application processing. The findings highlight the reduced need for extensive data preprocessing with machine learning and its implications for faster and more accurate mortgage decision-making.

**Keywords:** Machine Learning, Real Estate Mortgage, Financial Industry, Data Preprocessing, Traditional Statistical Methods.

# Leniency in cartel cases: Kosovo and EU

Egzona Osmanaj, Adnan Jashari, Avni Gjocaj

Assistant professor at the Faculty of Law, University of Business and Technology (UBT), Pristina,  
Kosovo  
Dean and Full professor to Faculty of Law, South East European University, Tetovo, Northern Macedonia  
Head, Mergers & Acquisition Division, Kosovo Competition Authority

egzona.osmanaj@ubt-uni.net  
a.jashari@seeu.edu.mk  
avni.gjocaj@rks-gov.net

**Abstract.** This study focuses on the analysis of the leniency program in Kosovo and the EU. The questions addressed in this study are: Which laws in Kosovo and the EU provide for a leniency program and which regulatory authority administers it? What violations of competition law does the covered leniency program? What conditions must be met to apply the leniency program or to be granted full immunity? In conclusion, in this study it was found that Kosovo has a legislation quite similar to the EU acquis, in the field of cartels and therefore also in terms of the fine's leniency program. But, unlike the EU, where the fines leniency program is routinely applied by the European Commission, in Kosovo the fines relief program has never been applied by the Kosovo Competition Authority. Specifically, in the practice of the Kosovo Authority, there is no case that any company has applied for exemption from fines for participating in any cartel. This study is necessary to understand the relationship between the local legislation and that of the EU, and at the same time it will also serve as a promotion of the fine's leniency program in Kosovo.

**Keywords:** Cartel, leniency, program, competition, Authority, Commission, EU.

# Revolutionizing Real Estate Mortgage Scoring: The Superiority of Machine Learning Over Traditional Statistical Methods

Visar Hoxha<sup>1</sup>, Blerta Demjaha<sup>2</sup> Veli Lecaj<sup>1</sup> Hazer Dana<sup>1</sup> Fuat Pallaska<sup>1</sup>

<sup>1</sup> Faculty of Real Estate, UBT  
Visar.hoxha@ubt-uni.net

<sup>2</sup> Real Estate Department, College ESLGblerta.demjaha@eu-  
kos.org

<sup>1</sup> Faculty of Real Estate, UBT  
Veli.lecaj@ubt-uni.net

<sup>1</sup> Faculty of Real Estate, UBT  
hazer.dana@ubt-uni.net

<sup>1</sup> Faculty of Real Estate, UBT  
fuat.pallaska@ubt-uni.net

**Abstract.** This paper explores the advantages of machine learning over traditional statistical methods in the context of real estate mortgage scoring. While traditional methods require extensive data preprocessing, machine learning offers a more streamlined and efficient approach. The financial industry is recognizing these benefits, with machine learning enabling faster mortgage application processing and reduced modeling biases. The findings underscore the potential of machine learning to revolutionize the financial sector.

**Keywords:** Machine Learning, Real Estate Mortgage, Financial Industry, Data Preprocessing, Traditional Statistical Methods.

# **Lack of professionalism in justice system as a source of criminality**

Elmi I. Kelmendi

Faculty of Law, UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Pristina, Kosovo  
elmi.kelmendi@ubt-uni.net

**Abstract.** Judiciary is considered as the main mechanism through which the countries fight and prevent the crime in general, especially the organized crime. Through the justice system, countries apply penalty measures against the perpetrators of criminal acts. The role of the Prosecutor as a body of prosecution and that of courts as a final mechanism to give justice, are considered to bear special importance. Lack of professionalism in justice system leads to turning down the accusations, endless extension of the legal processes, retrials or exoneration from the accusations by the Appeals or Supreme court. Many cases when the serious crimes reached statute of limitations, endless extension and retrial of the cases when the defendants were criminal groups and persons with high risk to society indicates that there is a justice system that suffers from lack of professionalism and other types of official position. With the purpose of halting this situation, one needs to put into place mechanisms of evaluation of performance or to proceed with the process of Vetting.

**Keywords:** Lack of professionalism, justice system, abuse.

# Property Law in legal terms

Enisa Haliti -Mustafa, Sevdai Morina

Faculty of Law, University for Business and Technology, Republic of Kosovo  
Faculty of Law, University for Business and Technology, Republic of Kosovo

enisa.haliti@ubt-uni.net,  
sevdai.morina@unt-uni.net

**Abstract.** Property rights may have different treatments in different legal systems, depending on time periods, countries and legal differences. Mainly, it is clear that there is a very well-known division, into immovable property and movable property, which means the division of things depending on their spatial position. The right to property in the legal aspect is regulated through many different laws, whether they are in our country or in any country where a certain issue can be discussed and dealt with which is chosen and guaranteed by law. Therefore, we can say that this right is fully guaranteed and protected by laws and by the constitution of a country. If we address the context in Kosovo, the laws that address and regulate property issues originate from different periods of Kosovo's history, from the time of confiscations in communism, the economic liberalism of the 1980s and the ethnic discrimination of the 1990s, until the regulations announced by the United Nations Interim Administration Mission in Kosovo (UNMIK), and the legislation adopted after February 17, 2008, as well as the 2012 law. More precisely, the property right is one of the oldest problems that history knows, since the creation of humanity and the right, this element has been a matter of discussion, some of the constituent parts of every society, often an element and factor of raising the problems of different social Even in Kosovo, the right to property is a right guaranteed by the Constitution, protected by the laws in force and according to the right to the protection of certain laws, the right to property is protected by a special law in Kosovo as well.

**Keywords:** Right, Property, Constitution, law, Kosovo.

## **Topic: Methods of acquiring ownership**

Enisa Haliti – Mustafa, Erëza Vladi

Faculty of Law, UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Pristina, Kosovo  
Student - Master of Civil and Property Law - Faculty of Law

enisa.haliti@ubt-uni.net  
erëza.vladi@ubt-uni.net

**Abstract.** This topic was carried out to present the ways of acquiring property which are applied in the Republic of Kosovo, precisely in the city of Pristina. Where the importance of gaining ownership according to the Law on Property and Other Property Rights consists in important legal titles which are considered as fundamental institutes of real property rights and in contrast to the absolute right of subjects. Since ownership is the basic institution for all subjects of law, then the goal of realization is also clear, because the main social problems stem from the lack of information on how to acquire ownership either from a previous holder or even from its acquisition without knowing who he met earlier or even questioning the existence of a holder. This research has managed to be realized thanks to empirical methods which are facts based on relevant institutions and material and formal resources of our country, also based on academic books and scientific works. This research has managed to be realized thanks to empirical methods which are facts based on relevant institutions and material and formal resources of our country, also based on academic books and scientific works. And as a conclusion, one of the most significant goals of our effort was to generate the data registered in the Cadastral Office and the Office of a private business operating in Pristina.

**Keywords:** Ways of acquiring ownership, subjects of law, Law on Property and Other Property Rights, Cadastral Office.

# The role of personality factors, social factors and social environment as factors of recidivism of juvenile offenders

Ahmet Maloku, Elda Maloku

UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, Kosovo University of Travnik,  
Faculty of Law, Department of Criminal Law Travnik, Bosnia and Herzegovina

ahmet.maloku@ubt-uni.net  
malokuelda@gmail.com

**Abstract.** The object of the research are the factors that contribute to the emergence and development of juvenile delinquents' recidivism, with a special focus on social-biological factors. The research elaborates and analyzes juvenilerecidivism as a concrete social phenomenon, dynamic and complex in its structure. The research examines the starting points for explaining the general factors that lead to the commission of criminal offenses, as well as the specific criminogenic factors that arise from general causes that directly lead to juvenile delinquent behavior. The purpose of this research is the assessment, analysis and role of personality factors, social factors and the social environment - peers as factors of juvenile recidivism. In the paper, the method of analysis and synthesis, inductive and deductive methods were used as comparative methods. The research will add and complete the body of scientific information on the issue of factors of juvenile recidivism and will encourage many criminologists, victimologists and lawyers to undertake other research that would lead to new indicators of factors of recidivism among juvenile offenders with a social-biological aspect.

**Keywords:** Juvenile recidivism, juvenile offenders, recidivism factors, personality factors, social factors, social environment.



# Imposition of alternative measures in North Macedonia and comparison of probation in France and Croatia

Alma Doko

Mother Teresa University, 1000 Skopje, Macedonia

alma.doko@unt.edu.mk

**Abstract.** When the criminal offense is mentioned, the only association is the prison sentence, as a justification that the purpose of the punishment is achieved with it. But today, modern criminal law legislation is characterized by humanity and the request for the imposition of non-institutional sanctions, in the sense that it is not always possible to expect that the desired results will be achieved with the prison sentence, which is the fight against criminality, its prevention and suppression. Fierce criticism of the short-term prison sentence and the prison sentence for its emphasized retributive character led to the emergence of new sanctions known as alternative measures, the main purpose of which is to suppress and prevent criminality, enabling the reintegration and resocialization of perpetrators of minor crimes. Although about 18 years have passed since the beginning of the application of the provisions on alternative measures in the Republic of North Macedonia, from the analysis of the statistical data, it can be noted that of the total imposed alternative measures, the conditional sentence is at the top of the list of imposed alternative measures. The purpose of this paper is, through statistical data analysis and visualizations, to determine the rate of imposed alternative measures in the Republic of North Macedonia and of imposed probation in EU member states such as France and Croatia, to compare the imposed measures in these countries, in terms of which measures are stricter in which countries, whether new measures should be foreseen and whether probation has an impact on the reduction of criminality.

**Keywords:** probation, alternative measures, prison sentence

# Comparative approach to the legal regulation of Joint-stock companies in the Republic of Kosovo, North Macedonia and Albania

Bashkim Nuredini, Vesna Paunkoska Doveska

Faculty of Law, University for Business and Technology, Republic of Kosovo Pivara Skopje AD, Republic of North Macedonia

bashkim.nuredini@ubt-uni.net  
vesnapaunkoska@gmail.com

**Abstract.** The aim of this paper is to give a comparative account of the normative organization of joint stock companies in the Republic of Kosovo, Macedonia, Albania, as the personification of capital trading companies, and as one of the most important forms of business management.

In three laws on commercial companies, the concept that a joint-stock company is a special form of a commercial company is accepted. What is important to note is the fact that joint-stock companies, as a special form of commercial companies, in the three countries that are the subject of the work's analysis, were created as a result of an "unnatural" economic process. Considering the socio-economic conditions, joint stock companies in all three countries were created in the process of transformation of social capital. On the other hand, by reviewing the professional literature in the field of company law, all scientific works that deal with this form of company point to the conclusion that the joint-stock company was created at the time of colonialism and the industrial revolution and the general opinion that modern capitalism cannot develop unless there is a joint stock company. The predecessors of joint stock companies gather in the first banks in Italy. The first forms of joint stock companies are large overseas colonial companies that were founded from 1600 onwards. In relation to the issue of introducing a normative system for the regulation of trading companies, England took the lead with its Companies Act in 1862. Today, under the influence of European integration, the process of coordination and harmonization of significant differences in the national legislation of the member states in relation to the development and legal solutions for joint-stock companies has begun. The Council of Europe adopted a series of directives related to the harmonization and unification of the organization and operations of joint stock companies.

**Keywords:** capital, company, shares, dividend, corporate governance.

# Association of Serb-Majority Municipalities in Kosovo: Community Need or Serbian Leadership Interest?

Behar Selimi

Faculty of Law, UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Pristina, Kosovo

behar.selimi@ubt-uni.net

**Abstract.** The Kosovo-Serbia dialogue, mediated by the EU, has not achieved its ultimate goal of normalizing relations between the two states, even after more than a decade of negotiations. Despite encountering significant challenges, a legally binding final agreement between the parties still appears to be distant. In the current phase of the dialogue, the main obstacle to further progress toward normalization seems to be the Association of Municipalities with a Serbian majority. While the dialogue is deemed essential for Kosovo and its inhabitants, including the Serbian community, Serbia's political leadership consistently deploys it as a tool to further their domestic and foreign policy agendas, often neglecting the genuine needs of the Serbian community in Kosovo. This paper centers on testing this hypothesis through an analysis of the constitutional status of minority communities in Kosovo, with a specific focus on the Serbs. It examines their participation in central and local government and delves into the reasons both in favor of and against the establishment of a sui generis association with monotonic features. Furthermore, the study examines international practices related to the collective organization of minority communities to safeguard their identity, culture, language, and religion. It aims to draw insights from successful global models to propose politically and constitutionally viable solutions. The paper concludes by presenting findings and insights that aspire to contribute to state policy within a scholarly context, addressing fundamental concepts such as freedom and human rights, collective rights, and the self-government of minorities.

**Keywords:** Kosovo, Serbia, Dialogue, Association, freedom and human rights, collective rights, self-government of minorities

# Protection and promotion of the right to property as a fundamental human right

Egzona Osmanaj, Sevdai Morina, Veli Lecaj

Faculty of Law, University for Business and Technology, Pristina, Kosovo

egzona.osmanaj@ubt-uni.net  
sevdai.morina@ubt-uni.net  
veli.lecaj@ubt-uni.net

**Abstract.** This study aims to understand the state of protection of property rights in Kosovo, as a fundamental human right. The research questions raised in this study are: Q1: What is the legal framework in the field of property protection in Kosovo and how does it align with international standards for the protection of fundamental human rights? Q2: What are the main problems related to the right to property and that risk the violation of the provisions of the European Convention on Human Rights and not only? The issues analyzed during this study have highlighted the need to improve the protection of property rights, especially the protection of women's rights and the property rights of displaced persons and members of non-majority communities. Another critical issue remains the high degree of informality in the property sector.

**Keywords:** protection, property, right, fundamental human right, property right.

# **Towards a new EU Pact on Migration and Asylum: The challenges ahead**

Elton Tota

Faculty of Law, UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Pristina, Kosovo

elton.tota@ubt-uni.net

**Abstract.** The constant increase in the waves of irregular migrants and asylum seekers arriving in the EU for almost a decade now has set the immigration and asylum policies in the EU in motion. Therefore, it's long been considered in the EU institutions that the existing European Pact on Immigration and Asylum needs to be changed, all this in order for the EU be able to respond properly to the new challenges the EU itself is facing in this area. The paper will discuss on how the first EU Commission package of reforms (proposed in 2016) for the common European asylum system (CEAS) stalled and due to the disagreements and non-necessary support by the Member States was later replace (in September 2020) by a new pact on migration and asylum offering a comprehensive approach aimed at strengthening and integrating key EU policies on migration, asylum and border management. Further, the paper will consider issues such as: what does the upcoming new Pact on Migration and Asylum provide, what are the challenges ahead towards finding the necessary consensus to approve it, and why still there are some EU member States do oppose it.

**Keywords:** Border Management; Migration; Asylum.

# Some characteristics of crime scene investigation in homicide cases

Florent Azemi

Faculty of Law, UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Pristina, Kosovo

florent.azemi@ubt-uni.net

**Abstract.** Murder is a criminal act, where with this act the life of a person is taken carelessly or intentionally. So the target of murder is human life. In these cases, one of the first actions in the preliminary phase of the criminal procedure (investigation phase) is the inspection of the scene.

So the investigation is an investigative process for securing evidence. The Code of Criminal Procedure does not determine the method of investigation, but only the legal matter for processing. The examination of the place of the event includes many procedural actions of the investigation such as: examination of the corpse, forensic expertise, fixation of tracks including latent ones, the use of many criminalistic - forensic technological tools and devices, etc. The experts, after carrying out the inspection of the scene of the event, collect important evidence, where together with the profiling of the mode of execution (modus operandi) they create and present the versions for investigation such as: natural death, accidental case, murder, suicide, for the motives and character of those involved. In this paper, we have addressed some methodical characteristics through tools that are necessary for the investigation, processing and argumentation of murder in general. Another characteristic in this paper is that with the procedural action of the crime scene investigation, some scientific methods are used in criminalistic tactics to distinguish murder, suicide, accidental death or natural death. For this, we have at our disposal the tools and methods, including technical and scientific ones that clarify all the circumstances such as: The place of the criminal event, the modus operandi system, the evidence at the place of the event, the time of the commission, and where in particular they help us to discover the perpetrator the criminal offense of murder.

**Keywords:** Crime scene, murder, evidence, tools, methods.

# Forms of manifestation of domestic violence against womens

Elda Maloku, Ahmet Maloku, Osman Jasarevic

University of Travnik, Faculty of Law, Department of Criminal Law Travnik, Bosnia and HerzegovinaBT -  
Higher Education Institution, Faculty of Law, Department of  
Criminal Law, Pristina, Republic of Kosova  
University of Travnik, Faculty of Law, Department of Criminal Law Travnik, Bosnia and Herzegovina

malokuelda@gmail.com  
ahmet.maloku@ubt-uni.net  
osmanjasarevic@hotmail.com

**Abstract.** The research problem is expressed in the multifaceted question of the complexity of the manifestation forms of domestic violence against womens. The main research findings of the paper are mainly reflected in the scientific role and importance of research in valid planning in order to analyze the scientific knowledge of different forms of violence against women. The perpetrator of psychological, physical, sexual, economic and other forms of violence interferes with the personal integrity of the victim and limits his or her human potential, therefore a qualitative approach is used to achieve the research objective. The research enables us to obtain relevant knowledge with the help of scientific methods - scientific knowledge about the elements of social reality and the impact of different forms on violence against women. This paper contributes from the point of view of experts in the field of criminology, criminalistics, victimology, criminal law and other fields, who are engaged in researching the impact of the phenomena of domestic violence, especially that against women.

**Keywords:** Domestic violence, violence against women, physical violence, emotional violence, sexual violence, economic violence, stalking, social isolation.

# Environmental law and the legal framework for integrating impacts on indoor air quality in life cycle assessments

Afrim Sylja and Visar Hoxha

UBT UBT Str. KALABRIA p.n., Pristina, Kosova

afrim.sylja@ubt-uni.net

**Abstract.** Products used during construction and operation of a building can contribute to Indoor Air Quality (IAQ) problems that affect occupants' well-being. However, IAQ is conventionally not addressed in the life cycle assessments (LCAs) of buildings and building related products even though IAQ leads to one of the areas of protection under LCA - human health impacts. In this study, we proposed an overall framework for integrating IAQ into LCA using the standard steps of LCA. The framework focused on IAQ and LCA modeling from two categories of building related products: 1) passive products that realize their function through initial installation and have long-term decayed emissions, and 2) active equipment that realize their function and cause emissions through daily operation. Dynamic and static life cycle inventory modeling approaches were proposed for passive products and active equipment, respectively. We concluded that it was feasible to integrate IAQ into building related LCA studies. Development of IAQ related impact assessment methodologies can improve upon the limitations of this study. Further studies need to be carried out to compare the health. This study demonstrates the appropriateness and significance of integrating indoor environments into LCA, which ensures a more holistic account of all exposure environments and allows for a better accountability of health impacts. Reducing chemical pressure on human and environmental health is an integral part of the global sustainability agenda.

**Keywords:** Indoor air quality, LCA, the legal framework of air quality.



# Lifelong Maintenance Contract in Kosovo: Regulatory Framework, Implementation, and Judicial Challenges

Jorida Xhafaj, Tringa Thaqi

University for Business and Technology, Lagj. Kalabria, Pristina, Kosovo

Jorida.xhafaj@ubt-uni.net  
tt48064@ubt-uni.net

**Abstract.** According to Kosovo Law No. 04/L-077 on Obligation Relations, lifelong maintenance occurs when one contracting party (the maintaining party) undertakes to support the other contracting party or any other person (the maintained party), and the other contracting party declares that he/she will leave the former all or part of his/her property, which includes real estate and movable property intended for the use and enjoyment of the real estate, and the delivery thereof is postponed until the former dies. In order to provide a thorough examination taking into account its origins, developments, and how it responds to practical situations, this paper is divided into three sections. The first section investigates the concept of lifetime maintenance contracts, a relatively new named contract in Kosovo, as well as their significance in obligations legislation. The second section delves into the regulatory framework that governs these contracts, while the third section examines their practical implementation and the challenges encountered in court. The study's aim is to shed light on the framework's legal guarantees and the potential for abuse in its narrow interpretation.

**Keywords:** Lifelong maintenance contract, Kosovo, legal framework, judicial practice

# Implementation of interview as a technique of examination methods in the process of scientific research of security phenomena

Ahmet Maloku, Omer Gabela, Elda Maloku

UBT - Higher Education Institution, Faculty of Law, Department of Criminal Law, Pristina, Republic of Kosova  
University of Sarajevo, Faculty of Criminalistics, Criminology and Security Studies, Sarajevo, Bosnia and Herzegovina  
University of Travnik, Faculty of Law, Department of Criminal Law Travnik, Bosnia and Herzegovina

ahmet.maloku@ubt-uni.net  
malokuelda@gmail.com

**Abstract.** Security is a social process whose endangerment can originate from various and diverse factors, whether they are natural phenomena or the action of human or other factors. These social security processes arise and develop with a certain determinism and changeability, that is, expressed dynamism, especially in contemporary human reality. It is precisely these and such parameters that determine the research of security phenomena, which implies a continuous process of research into the real threat system, as well as protection against that threat, with the use of knowledge gained through such research. Various scientific-research methods are used for researching security phenomena; among which we can single out the testing method. This method is widely used in the research of given phenomena, during which its three main examination techniques are distinguished. One of those techniques, which is particularly effective during the research process, is the interview. The interview represents a mutual interaction between the interviewer and the interviewee, it is penetrating in its function, less formalized in its essence, with the express requirement that it be performed by well-trained research personnel. During its realization, in the process of scientific research of security phenomena, certain scientific methodological-methodological rules and procedures must be respected due to certain specificities related to the very essence of security phenomena. All this points to the complexity of the interview as a technique of the interrogation method, because during its implementation the active role of the interviewer is required in terms of establishing and realizing his social relationship with the interview. Likewise, the interview must fulfill all scientific requirements and rules required by methodology, logic, psychology, methodology, as well as other social sciences, and its importance is reflected in its efficiency and penetration in the process of obtaining data from the field of security phenomena.

**Keywords:** security, investigation of security phenomena, investigation method, investigation method techniques, interview, specificity of interview application.

# A Path for Kosova Arbitration: What Are We to Do Next?

Korab R. Sejdiu

UBT - Higher Education Institution, Lagja Kalabria p.n., 10000 Prishtina, Kosovo

ORCID: 0009-0001-5611-0239  
korab.sejdiu@ubt-uni.net

**Abstract.** This paper delves into a pivotal issue concerning the progression of arbitration within the Republic of Kosovo. The nation introduced its Arbitration Law in 2008, subsequently witnessing the establishment of two alternative dispute resolution centers: the Permanent Arbitration Tribunal affiliated with the Kosovo Chamber of Commerce and the Arbitration Center associated with the American Chamber of Commerce in Kosovo. However, these arbitration centers have grappled with a limited caseload, and multiple factors have hindered the robust development of arbitration in Kosovo. This paper elucidates the primary causes behind the stagnation of arbitration in Kosovo, including the business community's limited awareness of arbitration as an alternative dispute resolution mechanism, the absence of comprehensive procedural guidelines for arbitrators, a deficiency in expertise among arbitrators certified by these institutions, and protracted processing of requests for the recognition and enforcement of arbitral awards by the courts, among other challenges. Moreover, this paper focuses on charting a way forward by identifying factors that can facilitate the increased utilization of arbitration in Kosovo, thereby mitigating the existing impediments. The paper scrutinizes several elements that can foster arbitration as a compelling alternative to the already overburdened Kosovo courts for resolving disputes amenable to arbitration. Some of these factors include, but are not limited to, enhanced professionalism in case administration active promotion of arbitration within the business community, filtering the current roster of arbitrators in both centers, regular training for arbitrators on procedures and case management and use of information technology in case arbitration. As Kosovo proceeds with its rule of law reforms, offering a well-functioning alternative like arbitration can alleviate the strain on the courts. Achieving this vision necessitates investments in the strategies proposed in this paper. These investments have the potential to stimulate the use of arbitration, thereby fostering a more effective and efficient dispute resolution landscape in Kosovo.

**Keywords:** Arbitration, ADR, law, technology, Kosovo

# Functionalization of the Commercial Court of Kosovo Between challenges and opportunities

Mahir Tutuli, Ramush Bardiqi

Faculty of Law, UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, Kosovo

mahir.tutuli@ubt-uni.net  
ramush.bardiqi@ubt-uni.net

**Abstract.** The purpose of this work is to provide a clear overview regarding the establishment and functioning of the Commercial Court of the Republic of Kosovo, as well as challenges and achievements during the period of one year since the establishment of this court. The purpose of establishing this court is to resolve economic issues of companies in Kosovo, as well as foreign investors, with the aim of effective and professional solutions to commercial disputes. The Commercial Court is based on efficiency, professionalism, independence, accessibility, transparency and fairness in order to function as well as possible and increase public credibility. In 2022, the Commercial Court began its work and was faced with numerous challenges that, thanks to the dedication and professionalism of the administration and judges, it successfully passed. Today, the Commercial Court is a successful institution. His performance in the first year of work was exceptional. Initially, the Court inherited almost ten thousand (10,000) old cases from all basic courts of Kosovo, while also accepting three thousand eight hundred (3,800) additional new cases during the first year. Despite the huge number of probate cases, the court achieved a resolution rate of 113%, resolving four thousand three hundred and twelve (4,312) cases during the year, which is more than the number of new cases received.

**Keywords:** Law, Court, Businesses, Foreign investors.

# Securing a Claim

Nehat Idrizi

Faculty of Law, UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, Kosovo

nehat.idrizi@ubt-uni.net

**Abstract.** “*Securing a Claim*”, is a topic of special importance for civil procedural law in the Republic of Kosovo, especially now that this institute is regulated by the provisions of the Law on Contested Procedure (LCP). In this regard, the role of the court is emphasized (both in the contentious procedure and in the enforcement one), in the implementation of this institute during the procedure of realization of the subjective civil rights of the parties in the procedure, or their contestation by the other party, as well as the implementation of the measures through which the claim is secured, in the enforcement procedure. Securing of a claim can be expressed if the security measure petitioner makes credible the existence of his claim, or his subjective right, as well as if there is a risk that without imposing such a measure the opposing party would significantly impede or hinder in various forms the realization of the claim. The LCP has provided the conditions under which the claim can be secured in the contentious procedure, the types of measures, the manner of assignment, as well as the legal remedies against the resolutions through which the proposed measures for securing the claim are determined or rejected.

**Keywords:** claimant (security measure petitioner), respondent (security measure opponent), security measure, interim security measure, guarantee.

# Unraveling the Enigma of Low Bankruptcy Cases in Kosovo: A Multifaceted Examination of Legal, Cultural, and Rule of Law Factors

Njomëza Zejnullahu

Faculty of Law, UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, Kosovo

njomeza.zejnullahu@ubt-uni.net

**Abstract.** Despite the apparent financial distress faced by numerous companies in Kosovo, the occurrence of bankruptcy cases remains disproportionately low, leaving creditors unpaid and raising questions about the adequacy of the existing legal, cultural, and rule of law frameworks. This research paper undertakes a comprehensive investigation to decipher the multifaceted causes contributing to this issue. To unravel this enigma, the research delves into the intricate interplay of various factors. It scrutinizes the legislative framework governing bankruptcy in Kosovo, critically assessing its adequacy and effectiveness. Through a thorough examination of bankruptcy laws, regulations, and court practices, the paper identifies potential legal barriers and procedural complexities that may dissuade companies and creditors from pursuing bankruptcy proceedings. Moreover, the paper evaluates the role of the rule of law in Kosovo, scrutinizing its impact on the enforcement of creditors' rights and the efficacy of the legal system. It investigates issues related to judicial independence, enforcement mechanisms, and the overall reliability of the legal system in addressing insolvency matter. By conducting in-depth interviews, surveys, and case studies involving key stakeholders, this research endeavors to provide a holistic understanding of the factors underpinning the low incidence of bankruptcy cases in Kosovo. This research serves as a valuable resource for policymakers, legal practitioners, scholars, and stakeholders seeking to address the challenges surrounding bankruptcy in Kosovo and foster economic growth and stability.

**Keywords:** bankruptcy, creditors, rule of law, companies.

# Artificial intelligence and privacy challenges

Vesna Paunkoska Dodevska, Bashkim Nuredini

Pivara Skopje AD, Republic of North Macedonia  
Faculty of Law, UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, Kosovo

vesnapaunkoska@gmail.com  
bashkim.nuredini@ubt-uni.net

**Abstract.** The meteoric popularity of Artificial general intelligence (AI) has created a real tech sensation thanks to user-focused products. But the boom in the widespread use of AI has arrived alongside users seemingly ignoring or unaware of the privacy risks posed by these projects. However, amid all this excitement, international governments and big tech figures are starting to sound the alarm, with some countries placing a temporary ban on AI and hundreds of tech and business leaders are signing an open letter calling for a six-month moratorium. But the broader landscape of threats that AI poses to privacy and data security goes beyond a single model or developer. The problem of AI data privacy, this topic was open long before it entered the mainstream. Data privacy scandals mostly happened out of the public eye. It is more than certain that with the increased use of artificial intelligence, the right to privacy and protection of personal data, as basic human rights, will be disturbed. Are states ready to provide adequate protection to citizens and put artificial intelligence in appropriate legal frameworks? There are more open questions and dilemmas on this topic, which remain to be resolved in parallel with the development of artificial intelligence or post festum.

**Keywords:** Artificial Intelligence, tech development, privacy, data protection, data security

# Termination of the mandate of representatives elected by the people and their replacement according to the legal framework in the Republic of Kosovo

Xhavit Shala, Mervete Shala, Bashkim Bellaqa

Law Faculty, UBT - Higher Education Institution, Lagjja Kalabria p.n., 10000 Prishtina, Kosovo  
Faculty of Economics, University of Mitrovica "Isa Boletini", Mitrovica, Republic of Kosovo

xhavit.shala@ubt-uni.net  
mervete.shala@ubt-uni.net  
bashkim.bellaqa@umib.net

**Abstract.** In Kosovo, governance originates from the people as in any other democratic state. This form of government is regulated on the basis of the Constitution and the Law on Local Self-Government. The purpose of this paper is to deal with the legal framework on the procedures for the preterm termination of the mandate of elected representatives in the central and local government and their replacement, focusing concretely on certain cases at the central and local level. The replacement of representatives is carried out through the election waiting list (for deputies and members of assemblies) or new elections (for Mayors of Municipalities) The legal framework, especially the provisions of Article 70 of the Constitution and Articles 35, 37, 50, 64 and Article 72 of the Law on Local Self-Government have determined the procedures for terminating the mandate. For mayors of municipalities, the mandate can be terminated by initiating a petition by 20% of citizens for the organization of new elections if this petition is supported by more than 50% of eligible voters. The methodology of the work is mixed. Through the qualitative method, interviews were conducted and analyzes were made of the local and international legal framework, reports of local and international institutions. Meanwhile, with the quantitative method, statistical analyzes of the reports of various bodies such as the Assembly, the CEC, the Judicial Council, etc. have been made. The findings of the research show that Kosovo has a legal framework that regulates the way of premature termination of the mandate of representatives elected by the people and the way of their replacement. Meanwhile, the interruption of the mandate for municipal institutions, such as that of the mayor, determines new elections. Also, there is no special law (for a referendum) that allows citizens to initiate a petition for the beginning of the premature termination of the mandate for mayors of municipalities.

**Keywords:** elected representative, Mayor of the Municipality, interruption of the mandate, early elections, Constitution, Law



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# GENEALOGICAL ANALYSIS OF TWO NAMES IN THE ROLE OF GENES IN ALBANIAN POPULATION

Naser Kamberi<sup>1</sup>, Hyzer Rizani<sup>2\*</sup>, Vlera Sadikaj<sup>3</sup>

<sup>1</sup>University of Business and Technology (UBT) - Department of Dentistry-Prishtina. R. of Kosovo.

<sup>2</sup>University of Business and Technology (UBT) - Department of Food Technology-Prishtina. R. of Kosovo-Corresponding Author: Assistant professore-mail: [\\*hyzer.rizani@ubt-uni.net](mailto:*hyzer.rizani@ubt-uni.net)

<sup>3</sup>University of Bisnes and Technology (UBT). Pristina.R. Kosovo (Student in Stomatology Management).

**Abstract.** In the human population we have adjectives consisting of two nouns. The first name represents the name of the son while the second name represents the name of the father such as: Nikë-Kole create the surname NIKOLA or Nikë-Shiq = NIKISHIQ. These two names (Binominal) are a consequence of historical, patriotic, religious and cultural processes. The surnames of the first generations were of the character of the Christian faith, the Catholic rite or the Orthodox rite, which in various territories were replaced by surnames of the Islamic faith. During this research we have usually noticed that these adjectives with two names are in the generation where the Catholic or Orthodox name became the Islamic name. This action was made by the Albanian family to preserve the family genealogy. These adjectives are mainly composed of two Catholic or Orthodox names and we have cases one Islamic name and the other Catholic name Hsan-Papa = Hasanpapa. Therefore, with this paper we will present the adjectives with two nouns and we will decompose their meaning. We will also prove that many such names are adjectives or names of Albanian ethnicity, such as Nikola, Niksic, Bashkurt, although today they are present in other ethnicities. We will also notice that the names with two adjectives are mentioned not only in Albanian persons but we also have the name of the city in Montenegro which is named after the Nikshiqi family.

**Keywords:** two-digit adjectives, Kolgeci, Nikola, Niksic, catholic, islamic, gene

# Child-Pough C patients with Liver cirrhosis and Proton Pump Inhibitors Use as Independent Risks of Spontaneous Bacterial Peritonitis

Zaim Gashi, Fadil Sherifi, Arjeta Gashi

UBT College, Prishtina, Kosova  
UCCK, Department of Gastroenterology with Hepatology, Prishtina, Kosova

**Abstract.** Background and aim: Since in the early 1980s, proton pump inhibitors (PPIs) have been used worldwide for a more of indications. Long term administration of PPIs for different indications, we can see more their side effects, including the possibility of an increased risk of spontaneous bacterial peritonitis (SBP). Association between PPI use and SBP development in cirrhotic patients is conflicting. Our aim was to evaluate for a possible association between PPIs use and Child-Pough score on SBP development in cirrhotic patients. Methods: A retrospective analysis of 18 out of 24 patients with SBP from 460 liver cirrhotic patients were taken PPIs. Included patients with a diagnosis of liver cirrhosis and SBP divided into two groups: the first group included all cirrhotic patients who did not use PPIs and the second group included all cirrhotic patients who were on PPIs at home. Was investigated and after affiliation for Child-Pough score in the group which had received one out of all PPIs. Results: In our analysis, SBP occurred in 3.91% (18/460 patients) of the included cirrhotic patients whether they were actively taking PPIs and 6/460 patients with SBP which not received PPI. On statistically analysis, PPI use was the strongest predictor for SBP in cirrhotic patients (odds ratio (OR) = 3; 95% confidence interval (CI): 2.62 - 4.58, P value < 0.01. In addition, patients on Child-Pough C, with severe hypoalbuminaemia and prolonged PT (prothrombine time) had more chance for development of SBP ( $D_{max}=0.22 < D(18, 0.01) = 0.371$  and  $P < 0.01$ ). Conclusions: Our retrospective cohort analysis has shown that the use of PPIs in patients with liver cirrhosis and decompensated liver cirrhosis are independent predicting risk factor for SBP development. We recommend that PPI therapy should be avoided or administered with caution in patients with cirrhosis.

# Proton Pump Inhibitors in the Treatment of Barrett's Esophagus: Ourexperience.

Zaim Gashi<sup>1,2</sup>, Arjeta Gashi<sup>3</sup>, Fadil Sherif<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.** Background: 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 histopathological 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 esophagus.

**Keywords:** Intestinal metaplasia, LGD, endoscopy, regression

# Conservative management of Lumbar Disc Herniation, literature review and case study

Ardiana Hajdari, Arsim Hajdari

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

ardiana.hajdari@ubt-uni.net

**Abstract.** Introduction: Lumbar disc herniation (LDH), most often referred to as early controversial, affects patients aged 30 to 50 years and more often in men than in men. contact with LDH. Herniated discs can result in local contact and mechanically deform the cutaneous nerve roots, causing radiculopathy, which requires either conservative or nonsurgical treatment. Purpose: The purpose of the scientific paper is the summary and acquisition of scientific data for the non-surgical rehabilitation of patients with any management and case study through conservative management. Methodology: Data sources were obtained from PubMed, Academia.edu, Research gate, etc. using herniated disc key, non-surgical treatment, physical therapy for herniated disc. Where randomized controlled trials, reviews, clinical trials and with analysis and analysis of the clinic and three-month controlled case study are included. Results: Regarding data from non-surgical studies, we have found positive results for their health conservatively in patients. Clinical research: In case study, patient improved after 3 months with oral medications and physical therapy. Conclusions: Based on the content analysis, the analysis of their analysis, the analysis of their analysis has little to moderate evidence of conservative patients. We need further research to show rapid recovery for the duration of performing conservative such as mechanical traction, therapeutic exercises, therapeutic modalities, etc.

**Keywords:** Lumbar disc herniation, Conservative management, Physical therapy

# THE LEVEL OF NURSING COMPETENCES IN DIFFERENT PERIODS OF THE PROFESSIONAL CAREER - A SYSTEMATIC REVIEW

Abdullah Gruda, MSc., PhD cand., Nurse<sup>1,2</sup>

Andrita Kurhasku, MSc., Nurse<sup>1</sup>

Arlinda Demaj, MSc., Nurse<sup>3</sup>

<sup>1</sup>UBT College – Higher Education Institution, Faculty of Nursing, 10000 Prishtina, Kosovo.

<sup>2</sup>University Clinical Center of Kosovo, Clinic of Neurology, 10000 Prishtina, Kosovo.

<sup>3</sup>Main Center of Family Medicine, 31000 Istog, Kosovo.

\* Correspondence:abdullah.gruda@ubt-uni.net +38344787664

**Abstract.** Introduction: Competence is a skill acquired through learning and experience. Nursing competence is a complex integration of knowledge including professional judgment, skills, values and attitude. Competency assessment should begin during nursing education and continue throughout the nursing career. The level of competence is important for quality assurance in the provision of nursing care. Aim: It was to provide a review of the current literature regarding the level of competence of nurses at different stages of their career. Method: For this literature review, scientific publications were searched in the CINAHL and PubMed databases. The search was made with English language terms limited to the last 10 years. Results: Nurses rated their overall competence as good to very good in 18 studies, and undergraduate students rated their competence lower than average in seven studies. After a one-year educational intervention program, nurses reported an increase in their competency scores. Higher age, educational level, additional training and work experience were also associated with higher competencies. Conclusions: The results of the studies showed differences in the level of competence of nurses at different stages of their career. Competency assessment is needed to provide current evidence to nursing managers, policy makers, and educators.

**Keywords:** competence, nursing, nursing student, nurse, professional career.

# Factors Influencing Workload Levels Among Nurses in Surgical Clinics at QKUK

Yllka Krasniqi<sup>1</sup>, Fëllënza Spahiu<sup>2</sup>, Shqiptar Demaçi<sup>3</sup>

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

**Abstract.** Introduction: The workload level among nurses in surgical clinics has been influenced by several significant factors. In this context, the number of patients, the complexity of care, shifts and work schedules, and the lack of resources are the key elements shaping this workload level. These factors significantly impact the performance and well-being of nurses in surgical clinics. Objective: This research aims to identify and analyze the factors influencing the workload levels among nurses in surgical clinics at the University Clinical Center of Kosovo (QKUK). Methodology: To achieve this objective, we included a sample of 60 nurses and conducted the research over a period of 1 month. The methodology used is a quantitative study, employing a questionnaire as a tool to gather data from nurses. After data collection, we performed statistical analysis using the SPSS software. Results: The results of this research are expected to highlight key factors that have influenced the workload levels among nurses in surgical clinics at QKUK. These factors include staff shortages, working conditions, staff-management relationships, and the lack of sufficient resources to carry out work efficiently. This study significantly impacts the scientific field, as it provides a clear composition of factors affecting workload among nurses in surgical clinics at QKUK. Conclusion: The information obtained is crucial for hospital administration and healthcare authorities, which can take concrete actions to improve working conditions and the quality of patient healthcare in these surgical settings. Additionally, this research can serve as an ongoing source for researchers and academics in healthcare to further delve into the challenges and opportunities in healthcare delivery in surgical clinics.

**Keywords:** Workload Level, Nurses, Factors, Influence, Surgical Clinics

# Colposcopy is being assessed as a potential diagnostic tool for cervix and vaginal pathology in primary care settings.

Hana Bejqi<sup>1 2</sup>, Besmira Morina<sup>1</sup>, Blend Bejqi<sup>1</sup>

<sup>1</sup> Medical School, University of Business and Technology, Prishtina, Republic of Kosovo

<sup>2</sup> Main Center of Family Medicine, Prishtina, Republic of Kosovo

**Abstract.** Introduction Colposcopy is a triage method used to evaluate and diagnose conditions such as cancer, cervicitis, polypus, genital warts, and uncomfortable or irregular bleeding in the vagina, vulva, and cervix. It's an essential step in cervical cancer secondary prevention. Objective This study's goal was to assess colposcopy's diagnostic performance in the diagnosis of cervical intraepithelial neoplasia in the Kosovo and Prishtina region's primary care setting. Method This prospective study involved 228 women from all across Kosovo who underwent a colposcopy at the Clinic for Gynecology and Obstetrics in Prishtina between June 2018 and January 2019. The inclusion criteria for this study were either screening positive (Pap smear grade ASCUS, high grade squamous intraepithelial lesion - HSIL, low grade squamous intraepithelial lesion – LSIL) or suspected invasive malignancy. Based on colposcopy findings, in some of them, cervical biopsy was done. Results During the period June 2018 and January 2019 in study were included 228 women, aged between 21 and 65 years, mean 43. Of them with ASCUS diagnosis were 166 women or 73%, with LSIL grade were 41 women or 14% and with HSIL grade level of Pap smear were 16 women or 7%. In three women reason for colposcopy was suspicion for invasive malignancy. All women with grade ASCUS and LSIL have been treated properly according to the protocols. In women with HSIL biopsy was performed and treatment continued according to the result of pathohistology. Women with malignancy suspicion have been referred to Department of Gynecologic Oncology. Conclusion The gold standard test for the diagnosis of cervical intraepithelial neoplasia (CIN) or invasive carcinoma in our study is colposcopy and histopathologic evaluation. Both of these methods contribute to adequate selection and treatment of women with different pathology of cervix and vagina. These findings point to a crucial window of opportunity for patients to learn more about colposcopy, which may boost diagnostic follow-up adherence and timeliness while also enhancing cervical cancer prevention in medically underserved women.

**Key words** Colposcopy, cervix cancer, colpitis, cervicitis, and human papilloma virus



# Barriers Affecting (Non)Reporting of Medication Errors by Nurses in Surgical Clinics at QKUK

Fëllënza Spahiu<sup>1</sup>, Yllka Krasniqi<sup>2</sup>, Dr. Besnik Elshani<sup>2</sup>

**Abstract.** Introduction: The barriers that affect the (non)reporting of medication errors by nurses in the Surgical Clinics at QKUK are critical factors that can hinder or influence the process of identifying and reporting medication errors by the nursing staff. These barriers are essential to understanding how patient safety and healthcare practices in this specific context can be improved. Aim: The main aim of this study is to identify and describe the key barriers that affect the (non)reporting of medication errors by nurses in surgical clinics and to provide recommendations for improving these practices. Methodology: The study was conducted through a questionnaire at the Surgical Clinics at QKUK. Various data collection methods, literature review, and a questionnaire with nurses were used to achieve the study's objective. The data were analyzed using the SPSS software. Results: The study has identified a wide range of barriers that influence the (non)reporting of medication errors by nurses in surgical clinics. These barriers include fear of legal consequences, lack of time for reporting, communication interruptions, and the absence of a clear reporting system. The study highlights the importance of identifying and addressing barriers that affect the (non)reporting of medication errors by nurses in surgical clinics. The results of this study can be used to develop strategies and policies that encourage reporting of errors and improve patient safety in this critical healthcare context.

**Keywords:** barriers, reporting, medication errors, nurses, surgical clini

# Clostridium difficile infection following standard triple therapy for H.pylori eradication: a report of 3 cases

Telaku Skender<sup>1</sup>, Edmond Islamaj<sup>2</sup>, Bajraktari Burim<sup>3</sup>, Telaku Mimoza<sup>4</sup>

<sup>1</sup> University for Business and Technology UBT, Prishtina, Kosova

<sup>2</sup> Department of Gastroenterology, UCCK, Prishtina, Kosova

<sup>3</sup> Medical Faculty, Prishtina, Kosova

<sup>4</sup> Medical Faculty, Tirana, Albania

**Abstract.** Introduction/Aim: Even though it is not known how much resistance to clarithromycin is in our country, the therapy of choice for eradicating H. pylori continues to be the clarithromycin-based triple therapy. This 14-day therapy is generally well tolerated, with rare cases of mild side effects. However, although rarely in the literature, there are cases with severe side effects with pseudomembranous colitis. Infection with C. difficile causes a spectrum of diseases ranging from occasional diarrhoea to colitis, toxic megacolon, and death. Here we have presented three cases of C. difficile infection that appeared after eradication therapy with clarithromycin-based triple therapy. After therapy with oral vancomycin, the diarrhoea stopped completely. Presentation of cases: Case 1. A.B. 36-year-old female, reported due to frequent bowel movements, one month after receiving the two-week eradication therapy with clarithromycin, amoxicillin and pantoprazole. Lactose intolerance was suspected, but the genetic test for lactose intolerance was negative. After C. difficile toxin A and B were positive, a 14-day therapy with oral vancomycin 4x125 mg was prescribed. After 10 days, the stools stopped completely. Case 2. B.B. 38-year-old male. Reported due to frequent stools three weeks after completion of eradication therapy with clarithromycin. Oral vancomycin 4x125mg was prescribed for 14 days. On the tenth day, stools stopped, and faeces began to form. Case 3. G.Z. 25-year-old male. Three months after the end of eradication therapy, watery, bloodless stools appeared. Since C. difficile toxin A and B were positive, he was prescribed oral therapy with vancomycin 4x125 mg for 14 days. Towards the seventh day, the diarrhoea left the terrace. In all three cases, control tests for C. difficile toxin A and B were negative. Colonoscopy was not performed on any of the patients, since such a thing is not mandatory. Diagnosis is made only by tests of toxins A and B in faeces and not by culture. Conclusion: These cases suggest that our doctors should have a high index of suspicion for pseudomembranous colitis in patients with diarrhoea after H. pylori eradication.

**Keywords:** H. pylori eradication, triple therapy, C. difficile infection

# GENEALOGICAL, GENETIC, BIOCHEMICAL ANALYSIS OF BAR'S BODY IN HEMOPHILIA TYPE A

Naser Kamberi<sup>1</sup>, Hyzer Rizani<sup>2</sup>, Elsa SEFERI<sup>3</sup>

<sup>1</sup>University of Business and Technology (UBT) - Prishtina. R. of Kosovo.

<sup>2</sup>University of Business and Technology (UBT) - Prishtina. R. of Kosovo.

<sup>3</sup>University of Bisnes and Technology (UBT). Pristina, R. Kosovo (Student in Stomatology Management)

**Abstract.** This study was included in a sample of 6000 individuals of the population of Presevo and villages. During family interviews we encountered cases, in women carriers with hemophilia while boys hemophilic. Assuming that the sex X chromosome is inactive, we did not have the opportunity for women to be hemophilic. By doing the genealogical analysis of these families we will present the thoughts about the role of Bar's body when it comes to type A hemophilia. For these cases of hemophiliacs laboratory, biochemical and genetic analyzes have been done to observe the level of penetration and expressiveness of factor VIII. We will present through the genetic tree the origin or genealogy of the gene for this disease. Based on biochemical and genetic analysis using PCR, we will present the level of factor I, IX, XI, aTTP, vWF- Von Willebrandov factor, locus Xq28, genotype ccdee, fibrinogen, blood group, rhesus factor in hemophiliacs included in this study.

**Keywords:** Bar's body, hemophilia, genealogical tree, PCR

# POSSIBILITY OF EYE OVERDOSE DURING RADIATION THERAPY OF HEAD TUMORS

Prof.ass. Dr. Lulzim Thaçi, Prof. ass. Dr. Besim Xhafa Phd (c). Burim Uka,

Faculty of Radiology and Biochemistry, UBT – Higher Education Institution, Calabria neighborhood, n.n, 10000, Prishtina, Republic of Kosovo.

Faculty of Radiology, Campus College-Rezonanca, Glloku te Shelgjet Veternik'' 10000, Prishtina, Republic of Kosovo

Faculty of Radiology, UBT – Higher Education Institution, Calabria neighborhood, n.n, 10000, Prishtina, Republic of Kosovo

lulzim.thaqi@ubt-uni.net

**Abstract.** Over 50% of all tumors, in Radiotherapy (Teletherapy), now and many years ago, start their treatment with Gamma rays and electrons. The success of the treatment is closely related to the accuracy of giving the dose in the tumoral volume (PTV-Planning Target Volume), localized by the doctor. It is known that the role of determining the exact area to be irradiated belongs to physics and the medical physicist. To guarantee successful radiation in this radiation zone, the patient must be correctly positioned according to the radiation plan. In this process, the patient, after lying on the bed of the accelerator, and before starting the radiation therapy, is given at least two X-ray exposures, from the angles usually combined by the accelerator, with gentry  $0^\circ$  and  $270^\circ$  or  $90^\circ$  and  $180^\circ$ , to see if the patient is positioned as required by the radiation plan. Modern accelerators used in radiotherapy, at angles (Gentri) of  $0^\circ$  and  $180^\circ$  in their tube, use only energy in MV (Mega Volt), while at angles of  $270^\circ$  or  $90^\circ$  they use energy in kV (kilo Volt). During radiotherapy of head tumors, when we analyze the dose received by the lens of the eye during tumor treatment, with these values of the energy received by the patient during positioning (Setup fields), it can often present a risk of overdosing the eyes and become in visual impairment measure. What dose is created by the use of MV energy with only 2 shots (2 MU - Monitor Units) and what from that kV, in this paper the measurement values are given, where it can be observed that despite the fact that lead filters with a thickness of 8 mm for eye protection, at the  $0^\circ$  angle to the MV energy source, the device records the dose of 1.3 mGy, while at the  $90^\circ$  angle with the kV energy source, the device records the dose of 0.29 mGy. Usually, the doctor's request is not to exceed the limit of 5 Gy during therapy. The therapy energy that must be used to achieve the radiation effects will not have to be below 4.5 Gy. When the positioning energy is added to this energy, and when the monthly values are multiplied for how long the therapy lasts, it turns out that the patient who has cancer in the area of the brain near the eyes, can very easily overdose and damage the sight. Considering that much more energy is produced from MV energy than with kV, in cases where it is possible, it is preferable to adjust the apparatus through the rotation of the angles so that the patient is subjected to as little MV energy as possible. In practice, it is more convenient to use the  $0^\circ$  angle with MV energy with eye protection through glasses and the  $90^\circ$  angle with kV energy. For this purpose, as a suitable solution, it is recommended to manipulate the apparatus where kV energy is used at the  $0^\circ$  angle and MV energy is used at the  $90^\circ$  angle, in which case the possibility of overdose of the patient in the eye lens would be reduced. This would take a few extra seconds in the process of the patient lying in the apparatus but would increase the chance of saving the patient from serious eye damage.

**Key words:** Head tumors, visual impairment, eye overdose.

## Improving patient satisfaction through communication strategy

Msc. Albana Hashani Berisha<sup>1</sup>, inf. Blerina Isufi Zejnullahi<sup>2</sup>,

<sup>1</sup>University Clinical Center of Kosovo, Clinic of Ophthalmology-Pristina, UBT-institution of higher education,

<sup>2</sup> Department of nursing Specialist Eye Ordinance, "Oftalmo Grup"

**Abstract.** In the era in which we live, the function and role of nurses is ever increasing. Having good communication skills is very important, as well as having the ability to make others understand what you are saying facilitates any relationship with them and enables the avoidance of misunderstandings and conflicts. The study highlights the processes/practices which have a direct impact on the statistics of patients and the individual performance of employees. Therefore, we as nurses should know that communication with patients, as well as with family members, is the main basis of the work or obligations of a white coat. Through this paper, I want to expand my knowledge about patient statistics in health care environments, through the knowledge of the health communication process, the knowledge of the factors that influence strategies for overcoming challenges related to communication. From the first contact of the meeting or the nurse-patient contact, a mutual relationship is created, where the nurse in some cases plays the role of the information provider, and in some cases is the recipient of the information that the patient discusses with him. Hospitality, listening, understanding, sincerity, giving and clarifying information are crucial in improving patient satisfaction through the communication strategy, facilitate decision-making and problem solving, which lead us to effective communication with the patient. The nurse plays a very important role in communicating with the patient/client. She/he is the person who spends the most time with the patient and constantly takes care of him/her. From the very first moments of presentation, reception and companionship of the patient, a relationship of interaction is created between each other. The nurse is the health professional who in the communication process is the information provider and the patient/client is the receiver, but these roles are sometimes exchanged depending on the situations. The way we communicate, the ethics we use, the behavior and attitude we maintain, the values we present, show and highlight the figure and model of the professional nurse, who plays a role in allowing patient satisfaction.

**Keywords:** communication, practices, performance, managers, nurses, development I, communication, statistics.

# **Integrated Health and Social Services for Aging Population 65+ with Chronic Noncommunicable Diseases in the Municipality of Lipjan**

Dr. Agim N. Krasniqi MD PhD c

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

**Abstract.** As the global population continues to age, municipalities face an increasing challenge in providing comprehensive care and support for older adults living with chronic diseases such as Diabetes, Hypertension, and Asthma. This abstract introduces a groundbreaking initiative in the municipality of Lipjan, which is aimed at addressing the complex healthcare and social needs of residents aged 65 and older who are coping with these chronic conditions. Table 1. Geographical and demographic structure, as well as local government in the Municipality of Lipjan Country Kosovo District District of Pristina Government • Mayor Imri Ahmeti (LDK) • Municipal 338 km<sup>2</sup> (131 sq mi) Elevation 563 m (1,847 ft) Population (2011) • Urban 6,870 • Municipal 57,605 • Municipal density 170/km<sup>2</sup> (440/sq mi) The population over 65 years old as a percentage of the total population reached 9.91% in 2021 in Kosovo, according to the National Statistical Office. This is 2.29% more than in the previous year. Based on the demographics of the population, about 9.5% are over 65 years old, that is, about 5,600 residents with age-related diseases or chronic non-communicable diseases. So far, the following are included in the program: 157 participants, of whom they have been treated, see the tables: Table 2. Forms completed by the team of nurse, social worker and family doctor in the personal file for chronic non-communicable diseases Completed forms in the Patient's medical file Geriatric Assessment Form 21 Geriatric Plan form 21 Geriatric Reassessment Form 11 Geriatric Plan Reevaluation Form 11 Table 3. Number of self-check booklets distributed and patient phone calls. No. of booklets for self-management of Diabetes- 171, Number of booklets for arterial hypertension- 108, Number of booklets for Asthma- 18 297 Number of counselling visits (including repeat visits) from the age of 35-65+ 531 Number of calls from patients with chronic non-communicable diseases 157 The integrated health and social services program have been meticulously designed to enhance the overall well-being and quality of life of the elderly population in these regions. This multifaceted approach combines medical care, social services, and community engagement to create a holistic support system.

# The role of peripheral blood smear analysis in diagnosing the type of anemia

<sup>1,3</sup>. Zafer Gashi, <sup>1</sup> Fitim Alidema.,<sup>2</sup> Muhamet Kadrija, <sup>3</sup>Fitore Gashi.,<sup>4</sup>Gentian Elezaj., <sup>4</sup>Liridon Elezaj.,<sup>3</sup> Fitim Gashi dhe <sup>4</sup>Shkelzen Elezaj

<sup>1</sup>UBT College Prishtina, Kosovë. <sup>2</sup>Universiteti i Gjakovës "Fehmi Agani" Gjakovë, Kosovë. <sup>3</sup>Laboratori Mjekësor Biolab- Zafi, F. Pejë, Kosovë. <sup>4</sup>Ordinaca "UROMED" Peja& Spitali regjional, Nëna Tereze, Pejë, Kosovë.

**Abstract.** Anemia is a condition seen with the first decrease or entry in relation to hemoglobin in the blood. Throughout the time of the blood test, we evaluate their color as well as the number of platelets present. Anemia is classified based on red blood cell morphology, red indices, and hemoglobin colors. Aims and objectives: With this blood analysis to help clinicians to diagnose the type of anemia by examining peripheral blood streaks and the parameters generated by the available automated counter and to compare the findings between these two methods. Material and methods: The study included the results of hemogram (hemogram) and peripheral blood smear analysis of 340 patients in the time period 01.03.2022. until 01.08.2023. The hematological analysis (schedule) was done at the Polyclinic Laboratory, Biolab Zafi, in Klina and the Medical Laboratory, Biolab-Zafi-F in Pejë. The blood sample for analysis was collected from venous blood with Vacutainer EDTA (Ethylenediaminetetraacetic Acid) and from capillary peripheral blood. Strip peripheral blood and stain using May-Grunwald Gimsa stain. Findings in the peripheral strishon and the parameters generated by the counter of this number and the histograms that are evaluated and compared. Results: From 340 samples, hypochromic microcytic anemia is the most common (46.5%), followed by normocytic normochromic (26.3%), dimorphic (22.7%) and finally, hemolytic anemia (4.5%). Compared with the parameters of the ER generated by the counter found and the histograms, the findings in the peripheral strishon, in anemia showed a significant significant difference ( $P < 0.0001$ ). Conclusions: Peripheral blood smear examination together with ER histogram study may be able to categorize the type of anemia in many cases. Completing these hematological analyzes with other biochemistry parameters can increase the accuracy of the diagnosis of anemias.

**Key words:** anemia, histogram, blood count, hemogram

## Male infertility caused by bacterial genital infections

Zafer Gashi, Fitim Alidema., Muhamet Kadrija, Fitore Gashi., Gentian Elezaj., Liridon Elezaj., Fitim Gashi and Shkelzen Elezaj

UBT College Pristina, Kosovo. University of Gjakova "Fehmi Agani" Gjakova, Kosovo. Biolab Medical Laboratory - Zafi, F. Pejë, Kosovo. "UROMED" surgery Peja & regional hospital, Mother Teresa, Peja, Kosovo.

**Abstract.** Genital infections are common in men. Male infertility doctors encounter them every day. They are most often caused by the spread of a urinary infection, but the hematogenous and lymphogenous routes of genital infections are also possible, as well as the spread of the infection from surrounding tissues and organs. Gram-positive bacteria that most often cause infections of the genital organs are: *Staphylococcus aureus*, *Staphylococcus saprophyticus*, *Staphylococcus epidermidis*, *Enterococcus faecalis*, *Streptococcus agalactiae*, while the most common gram-negative bacteria are: *Escherichia coli*, *Proteus* spp., *Klebsiella* spp., *Enterobacter* spp., and enterobacterionas and other enterodoma. The frequency and specificity of some infections differ from bacteria, such as: *Chlamydia trachomatis*, *Mycoplasma hominis*, *Ureaplasma urealyticum*, *Neisseria gonorrhoeae*, *Treponema pallidum* and *Mycobacterium tuberculosis*. Understanding the link between infections of the accessory glands (associated with the male gonads) and reduced or absent male fertility has been scientifically proven and various antibiotic protocols have been proposed for treatment. In most cases, urogenital bacterial infections are successfully treated, but the increase in the number of leukocytes and impaired function of the accessory glands lasts for several months, which continues to affect a man's fertile capacity.

**Key words:** Male infertility, Bacterial diseases, Gram positive and gram-negative bacteria.



# PREVALENCE OF ANTIBIOTICS IN PATIENTS HOSPITALIZED IN "ISA GREZDA" GENERAL HOSPITAL IN GJAKOVO

<sup>1</sup> Fitim Alidema, <sup>2</sup> Rina Shehu, <sup>2</sup> Arieta Hasani Alidema

Faculty of Pharmacy, UBT College, Pristina, Kosovo,  
Technical Faculty of Anesthesiology, UBT College, Prishtina, Kosovo

**Abstract.** Introduction- An important look at the knowledge of antibiotics, their mode of action, and their efficient use. Antibiotics are medications that destroy or slow the growth of bacteria. They do this by killing bacteria and preventing them from multiplying, which is why they are indicated for the treatment of bacterial infections. The purpose of this study is to determine the frequency of antibiotics in the "Isa Grezda" hospital in Gjakova during the COVID-19 pandemic, the treatment of infected patients, the study of the literature regarding the effectiveness of antibiotics in the COVID-19 virus. Methodology- This is descriptive research that aims to show the types of antibiotics used in the general hospital "Isa Grezda" in Gjakova during the COVID-19 pandemic. For data collection, sources such as documentation, protocols of medical visits, archives were used, where the cases and treatments received by infected patients during the period June-December 2020, 2021 were documented. The results of the literature research have provided sufficient data about antibiotics and their classification, mode of action, mode of administration, management and their most efficient use. Conclusions - From the results of this research, it can be concluded that the use of antibiotics in infected patients was high, due to bacterial co-infections that were common among patients with COVID-19. Antibiotics such as Ceftriaxone, Imipinem, Ciprofloxacin, Azithromycin have been some of the most prescribed antibiotics in patients infected with COVID-19.

**Keywords:** Antibiotics, Use, COVID-19.

# A cross-sectional study, Prevalence of spinal degeneration in the population of Kosova

Prof.Ass. Ilir Ahmetgjekaj, MD Pfd<sup>1,2</sup>, Dr. Kaltrina Goçaj, PhD<sup>2,3</sup>, Dr. Sci Arben Kutllovci, PhD<sup>1,2</sup>

<sup>3</sup>University of Business and Technology - UBT

<sup>2</sup>University Clinical Center of Kosovo - UCCK  
University of Prishtina, Faculty of Medicine "Hasan Prishtina

**Abstract.** The aim of the study: This study aims to assess the incidence of spinal degeneration in the population of Kosovo. Correlation between specific age groups and severity of degeneration discussed in the spine. To assess the gender variation. The methodology of the scientific work: This is a retrospective Cross-Sectional study, with the data obtained from this conducted in the period of time from April 2021 to December 2021 at the University Clinical Center of Kosovo. 478 MRI of the spine were taken, including cervical, thoracic and lumbosacral levels as well as the whole spine. The sample is randomized. Total (478 patients, 272 women, 206 men; average age: 45.96). Data collection: Demographic data, including age and gender, were obtained. MRI scans clarified the severity of Pfirrmann disc degeneration (grade I-V). Imaging technique: The magnetic resonance apparatus is Phillips 1.5T. MRI scans of the spine were processed by reviewing images in sagittal T1 and T2 WI sequences. Findings: The data were processed using the IBM SPSS 26 software application program. Total MRI exams: 478, Normal Findings (No Degeneration) 60, ~37%. Degenerative Changes were distributed as follows, with the highest prevalence in the cervical region being in C4/C5 disc level. As of the Pfirrmann disc degeneration Grade 1: 60 (33.7%) and Pfirrmann Grade 2: 40 (22.5%) of the patients. Analysing 99 exams of the thoracic region, Th11/L1 observed the most disc changes. Pfirrmann Grade 1: 38 (38.4%), Pfirrmann Grade 2: 19 (19.2%). And the lumbar region included 223 MRI exams, with 82 without incidence of disc degeneration and the rest distributed as follows. L5/S1 observed the most changes. Pfirrmann Grade 1: 28 (12.6%), Pfirrmann Grade 2: 43 (19.3%), Pfirrmann Grade 3: 40 (17.9%), Pfirrmann Grade 4: 25 (11.2%), Pfirrmann Grade 5: 5 (2.2%)

**Conclusion:** The study highlights varying degrees of disc degeneration across different spinal regions. The lumbar region, especially L5/S1, shows the most degeneration, while the cervical C4/C5 and thoracic Th11/L1 regions predominantly exhibit milder degenerative changes.

**Clinical Importance:**

- **Targeted Treatments:** Knowledge of which spinal regions are most prone to degeneration allows for more precise therapeutic interventions.
- **Early Detection:** With about 37% of discs showing no degeneration, there's a strong case for regular spinal check-ups to catch and address changes early.
- **Guided Patient Care:** These insights can help clinicians in tailored patient education, treatment decisions, and preventive measures.

In summary, this study offers valuable data on spinal health, aiding in better patient care and treatment planning.

# Nosocomial infections

Rexhep GjYLIQI<sup>1,2</sup> Behram Gjyliqi<sup>3</sup>, Lirak Gjyliqi<sup>1</sup>

<sup>1</sup> UBT (University for Business and Technology)-Higher Education Institution

<sup>2</sup> University Clinical Center of Kosova<sup>3</sup> Emergency Medicine Center-Prizren

**Abstract.** Infections caused by health care or nosocomial infections are a continuous problem for health institutions, especially for hospitals. They are infections caused under health care which greatly increase morbidity, mortality and the cost of treatment. Healthcare-acquired infections are a global problem. Their incidence in developed countries is about 7%, while in developing countries it is about 10%. They are more frequent in invasive treatment units such as intensive, adult and pediatric treatments, surgical units, infectious disease units, and rarer in conservative treatment units. Nosocomial infections with the passage of time and the increase of the "period of stay in the hospital" create resistance to most antibiotics, which complicates the treatment of diseases caused by these agents. Even our country faces such a problem. Nosocomial infections have the highest incidence of their presence in intensive care, especially in the Central Intensive Care Unit of UCCK. The causes with the highest incidence are *Acinetobacter baumannii*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*. Samples for study were taken from the endotracheal tube, the central venous catheter, the urinary catheter and from the wounds. The materials were prepared in the microbiology unit of the National Institute of Public Health. In-hospital infections are tried to be controlled by applying infection control programs and controlling the use of antimicrobials.

**Key words:** Nosocomial infections, health care, antibiotics, resistance, intensive care

## **In the world, despite the benefits of normal birth, the number of cesarean births is increasing.**

Xhevat Kurhasani<sup>1</sup>, Bleona Uka<sup>2</sup>, Rina Rexha<sup>3</sup>

<sup>1</sup>UBT-Higher Education Institution, St. Kalabria, p.n. 10000 Prishtina, Kosovo, xhevat.kurhasani@ubt-uni.net

<sup>2</sup>UBT-Higher Education Institution, St. Kalabria, p.n. 10000 Prishtina, Kosovo, ukableona987@gmail.com

<sup>3</sup>NGO KeA - "Kasneçët e Ardhmërisë", St. Kalabria, II/I/4, 10000 Prishtina, Kosovo

rinarexha28@gmail.com

**Abstract.** Aim: This study aims to identify which methods of birth are preferred by women in the municipality of Peja and which are the main factors that influence the selection of the method of birth. Methodology: In this cross-sectional study the sample taken for this research consisted of 51 women from the municipality of Peja, who agreed to be interviewed. The focus has been on women who previously had one or more births, i.e., multiparous women. The sample was not taken in specific places such as a hospital or gynecological department, but randomly and from my relatives. The research instrument was a questionnaire that had a total of 19 questions divided into three parts. The first part: the basic characteristics of the participants, the second part: the subjective perception and the course of the previous birth, and the third part: the preferences for the mode of delivery according to the perceived benefits of vaginal birth and cesarean section among the research participants. Results: 51 women participated in the research, all from the municipality of Peja and all multiparous women. 75% of them were aged 26-25 years, most of them 57% had tertiary education and one third had experience of previous abortion. More than 38% had difficult births, some of them with serious problems, and 51% preferred cesarean delivery. Conclusion: A large number of new mothers prefer cesarean delivery, especially those of younger ages and those with higher education. Less painful birth, shorter labor time, avoidance of stress, fear, worries, and complications of pregnancy have been identified as factors influencing the choice of cesarean delivery.

**Keywords:** normal birth, preference, cesarean section

# Implementation of information systems in public health programs - SIM-TB case study

Olger Brame, Alda Jashari

Xhevat Kurhasani<sup>1</sup>, Njomza Mala<sup>2</sup>, Rina Rexha<sup>3</sup>

<sup>1</sup>UBT-Higher Education Institution, St. Kalabria, p.n. 10000 Prishtina, Kosovo  
xhevat.kurhasani@ubt-uni.net

<sup>2</sup>NIPHK – National Institute of Public Health of Kosovo, St. Nëna Tereze p.n.10.000, Prishtina, Kosovo,  
njomza\_mala@hotmail.com

<sup>3</sup>NGO KeA - “Kasneçët e Ardhmërisë”, St. Kalabria, II/I/4, 10000 Prishtina, Kosovo,  
rinarexha28@gmail.com

**Abstract.** Tuberculosis is one of the leading causes of disease and death in the world. One of the main pillars of the DOTS strategy is the surveillance and monitoring systems. The TB surveillance network in Kosovo consists of ten TB centers for primary, secondary, and tertiary care. NGO KeA is the main partner of the national program for TB surveillance. The paper-based surveillance system proved to be problematic in influencing the decision-making processes of the TB program. Purpose: To develop a web application for tuberculosis surveillance that enables evidence-based implementation of the TB program Methodology: The TB notification form, with unique patient numbers, general data, new case definitions, laboratory, diagnostic, and treatment data was developed and enabled the generation of case, age group, and treatment results reports according to municipalities, regions, or the whole country. All centers were equipped with computers, internet, manuals, and staff training. Results: The web application named SIM-TB, with several modules, was developed and successfully installed in all centers providing real-time TB data and easily and quickly obtaining essential information for each TB case, as well as the generation of various reports that reflected TB epidemiology of the country. Data from the system could be extracted to Excel and used for further statistical analysis. Conclusion: The web-based surveillance system, successfully implemented within the existing health infrastructure, showed advantages over the paper-based system, enabling timely management of TB cases and evidence-based program implementation. SIM-TB represents the best model for implementing information systems in other public health programs.

**Keywords:** Tuberculosis, Surveillance, Information Systems

# **An outbreak of food poisoning: A brief epidemiological investigation**

Fadil Kryeziu<sup>1,3</sup>, Violeta Kryeziu<sup>1</sup>, Violeta Emini<sup>1</sup>, Lebibe Hashani<sup>1</sup>, Afrim Krasniqi<sup>2</sup>, Sejran Abdushi<sup>3</sup>

<sup>1</sup>. Institute of Public Health\_Center in Prizren

<sup>2</sup>. The main center of family medicine in Malishevë

<sup>3</sup>. UBT College, Pristina

**Abstract.** At a time when the dynamics of life are moving fast, it has made fast foods take a prominent place in people's nutrition. Bars that serve fast food, have sprouted like mushrooms, especially around schools and universities. The hygiene of these places is often deficient and even represent a source of various epidemics, especially outbreaks of food poisoning (intoxicatio alimentaris). The aim of this paper is to study the outbreak of food poisoning in one of the fast-food restaurants in the town of Malisheva. This study investigated 211 cases of patients who sought medical help with gastrointestinal (GI) symptoms after eating at a fast-food restaurant. Data were collected from direct patient surveys, inpatient records, and laboratory data. We have also taken into consideration the data of the analysis of water for human consumption, from the bar and around it, the smears of the surfaces and the analysis of food samples. It turns out that 211 people who have been served at this service bar have sought medical help. The symptomatology of poisoning started after 4-5 hours, while after approximately 24 hours the number of patients with GI disturbances started to increase. 52 of them were admitted to Prizren Hospital. For the same, a stool sample was taken for laboratory analysis, respectively research of the cause. Salmonella enteritidis has been identified in a number of cases. Fast foods and poorly handled during the cooking process are often a source of infection for the people being served. In our case, this is proven, especially with the use of sauces prepared for this purpose. Cases of food poisoning add to our insecurity and health while eating. Competent bodies should increase the level of vigilance to create greater safety for food products.

**Keywords:** Salmonella Enteritidis, food poisoning, epidemiology of poisoning, gastroenteritis

# Migraine headaches in pediatric ages: A study on prevalence, influencing factors, and manifestations in a group of students in Kosovo

Dr. Adonis Breznica

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

**Abstract.** Introduction: Migraine headache is the most common type of recurrent headache. It is characterized by episodic attacks that can range from moderate to severe intensity, with focal location in the head, pulsating sensation, and accompanied by nausea, vomiting, sensitivity to light and/or sound. Migraine has been reported to occur in 10.6% of children aged 5 to 15 years, and up to 28% in older adolescents. A thorough medical history and physical examination, including a neurological examination focused on the headache, have been shown to be sensitive diagnostic indicators. Neuroimaging is required when the neurological examination is normal or when atypical neurological phenomena occur during migraines. The treatment goals are to reduce the frequency, severity, duration of headaches, and the disabilities they cause. Objective: To present the types of migraines and the factors influencing their occurrence. To present the frequency of migraine headaches in a school in Kosovo. To analyze the incidence of migraine headaches by gender and age, and to demonstrate the impact of different factors on the onset of migraine headaches, such as the influence of electronic device usage, diet, sleep, and positive family history. Methodology: The study is part of cohort research. International literature published by authors in this field will also be used, including literature from PubMed, Web of Science, Scopus, and Google Scholar. Results: The study will show that migraines are observed in a significant portion of students aged 8 to 15 years. The presence of migraines is more pronounced in female students and is influenced by other factors such as irregular eating habits, lack of sleep, and positive family history of migraines. Students with migraine headaches have had absences from school and have experienced disabilities due to this condition. They have also spent more time on electronic devices and have had more limited sleep compared to students without migraines. A thorough medical history and physical examination, including neurological examination, are important tools for diagnosing migraines. Neuroimaging is only required in certain cases when the neurological examination is abnormal or when atypical neurological phenomena occur during migraine attacks. The treatment of migraine headaches in pediatric ages aims to reduce the frequency, intensity, and duration of attacks, minimizing the disabilities and negative consequences it causes in the lives of children and adolescents. Recommendation: Early identification and assessment of migraine headaches are important. It is crucial for healthcare professionals to have awareness and sufficient knowledge of migraines in children. This will aid in the identification and early diagnosis of this condition, allowing for the initiation of effective treatment as early as possible. The treatment of migraine headaches in children and adolescents should involve a combination of medical and non-pharmacological therapies. This includes the use of specific medications for migraine treatment, as well as relaxation techniques, psychological therapy, and lifestyle changes, such as dietary adjustments, sleep regulation, and physical activity. Providing detailed education and information to patients and their families regarding migraine headaches is important. This includes explaining the symptoms, potential triggers, treatment, and management strategies for migraine headaches, as well as assistance in identifying provoking factors such as food, stress, lack of sleep, and excessive use of electronic devices.

**Keywords:** Migraine headache, Children, Prevalence, Factors, Influence.

# **The effects of the course on human sexuality on students' knowledge and attitudes about sexual health**

Hajrullah Fejza, Ejona Icka, Albina Fejza, Fitim Alidema

UBT College, Prishtinë

**Abstract.** Sexual health is a guaranteed right that is part of human rights. However, many countries and institutions are reluctant to include programs in this field in their curricula. UBT College is the leader and the only one in the country and region that students have the Human Sexuality module as a compulsory subject. The purpose of this paper was to measure students' knowledge and attitudes about this field before and after finishing the module. The methodology used in this research is based on measuring the level of students' knowledge before and after completing the learning module. The SKAT test (The Sex Knowledge and Attitude Test) was used, which consists of two parts: knowledge and attitudes. The research was carried out during the 2022-2023 school year and 178 students of the Department of Nursing at UBT participated. The obtained results have shown significant statistical differences in some of the areas tested in both parts, in knowledge and attitudes. The conclusion of this research states that the effect of this module in increasing knowledge and changing attitudes about sexuality has been effective.

**Keywords:** Sexuality, sexual education, knowledge, attitudes



# Challenges Faced by Nurses during Night Shifts: A Literature Review

Safet Zejnullahu, Shqipe Agushi, Nafije Pajaziti; Denis Celcima

University of Business and Technology, Prishtinë, Kosova

**Abstract.** Background: Nursing, due to its unique nature, often involves rotating shifts, impacting both the physical and psychological well-being of nurses. Night shifts in nursing bring about socio-cultural and ethical challenges, which are not confined to Iran but extend to family-oriented countries like Pakistan, Japan, and developed nations. In Iran, night work remains a persistent issue in the nursing community, leading to numerous requests from nurses who feel compelled to work during the day to sustain their employment, even affecting experienced nurses. Methods: A comprehensive search was conducted in various academic databases, including PubMed, CINAHL, and Jstore. Keywords used for the search included "night shift nurses," "night shift challenges," "night shift work," "nurse well-being," and "nurse-patient ratio." The inclusion criteria were studies published in English from 2010 to 2021, focusing on challenges faced by nurses during night shifts. A total of 25 relevant studies were selected for this review. Results: Prolonged exposure to night shift work has been linked to a range of physical and mental health issues, including increased risk of cardiovascular diseases, obesity, depression, and anxiety. Nurses working night shifts are more susceptible to these health concerns. Furthermore, alertness and performance levels tend to decline during the night, leading to potential errors in medication administration, documentation, and communication. These errors can compromise patient safety and lead to adverse outcomes. Conclusion: Nurses working during night shifts face a multitude of challenges that impact their physical and mental well-being, as well as the quality of patient care they provide. Addressing these challenges requires a comprehensive approach, including implementing effective staffing strategies, providing resources for better sleep hygiene, offering mental health support, and fostering a culture of well-being within healthcare institutions. Recognizing and mitigating the challenges faced by nurses during night shifts is crucial for ensuring the overall health and safety of both healthcare professionals and their patients.

**Keywords:** Night shift nurses, night shift challenges, patient safety, social and family disruption, staffing shortages, physical and mental health impact.

# EPIDEMIC OF ACUTE GASTROENTERITIS IN DEÇAN MUNICIPALITY, JULY 2021: CHALLENGES IN RESEARCH AND MANAGEMENT OF THE EPIDEMIC

Naser Rugova, Brikenda Sharapolli,

University of Business and Technology, Prishtinë, Kosova

**Abstract.** Introduction: This paper presents an in-depth analysis of the management of an acute gastroenteritis epidemic in the municipality of Deçan, with a specific focus on the epidemiological and environmental aspects of the event. The epidemic began in July 2021 and affected a significant number of residents in the municipality of Deçan and nearby areas. Aim: The aim of this research is to investigate and identify the routes and means of transmission of acute gastroenteritis in the municipality of Deçan, as well as other potential risk factors, with the goal of implementing appropriate control measures. Research Methodology: Descriptive epidemiological research methods and a case-control study model have been employed. Mixed methods (qualitative, quantitative, and laboratory) were applied. The results of clinical samples from affected patients and water samples from the water supply system and private wells were analyzed. The research was carried out at the QRSHP in Pejë and at the National Public Health Institution in Pristina in the Department of Human Ecology / TLC (Center of Testing Laboratories and the Laboratory of Microbiology, as well as some more specific testing are done in the external laboratories of our country. Within the epidemiological research framework, 1371 cases of acute gastroenteritis were surveyed and monitored, with an incidence rate of 3225.5 cases per 100,000 residents. The results indicate that the female gender and the age group 15-34 are the most affected, with the main symptoms being watery diarrhea and vomiting. The epidemic started on July 9, 2021, and peaked on July 11, 2021, coinciding with the cessation of drinking water supply from the Hasanagës Springs in Deçan. Physico-chemical and bacteriological analyses of the water showed that some water samples lacked residual chlorine, an indicator of unsafe drinking water. Some water samples exhibited bacterial contamination and exceeded the standards for drinking water. The results and conclusions of this study are important for understanding the epidemiology and the impact of water contamination on the spread of acute gastroenteritis in this area. They also provide recommendations for future prevention and treatment measures for this disease in the local community.

**Keywords:** Acute gastroenteritis, epidemic, waterborne illnesses, Deçan.

## The influence of social networks on adolescents

Qendresa Demiri

**Abstract.** Introduction: Social networks, including adolescents, have become an inseparable part of everyone's daily life. They have a profound influence on how we communicate, interact, and access necessary information, hence our experiences with social networks can be both positive and negative. Social networks' positive effects are socialization, access to necessary information, and communication with family and friends. On the other hand, some of the negative effects include adolescent isolation, cyberbullying, and the presentation of health problems related to their eating, sleep, and psychological well-being. Purpose: This research identified the impacts of social network usage during adolescence, including effects on family and social relationships, academic performance, physical activities, as well as sleep patterns and nutrition. The purpose of this study was achieved through a questionnaire, which was conducted with high school students in the municipalities of Prishtina and Viti, and the analysis of data obtained through the questionnaire. Methodology: The research was qualitative, phenomenological, prospective, and involved 130 adolescents. The instrument used was a self-compiled questionnaire. Results and conclusions: The overwhelming majority of adolescents feel dependent on social network usage and use them irregularly, even during unspecified and extended hours, thus lowering their school performance. Furthermore, these results indicate that we deal with adolescents with poor sleep patterns and nutrition habits. The main motives for adolescents' social network usage are continuous communication with others and the possibility to access the information they need and are interested in.

According to them, social networks do not affect their relationship with their family, but they further strengthen their relationships with peers. Moreover, most of them engage in physical activities daily and weekly.

**Keywords:** networks, social, adolescents, nutrition, sleep

# Nursing care in patients with pneumonia

Trendeline Pillana

**Abstract.** Entry-Pneumonia is an inflammation of the lungs that can affect people of all ages. Pneumonia can be caused by bacteria, viruses and fungi. It is an infection of the small airways and alveoli. The alveoli fill with fluid or pus, making it difficult to breathe. Purpose-The main purpose of the study is to know the disease of pneumonia, etiology and pathogenesis, complications and medications, as well as nursing care in patients with pneumonia. Through this work and study that I have done I aimed to provide science and for the medical staff a material as important and understandable as the disease of pneumonia. Material and methods- This study uses a mix of data collection methods and research methods. As for the ways of studying, we have the possibilities of qualitative and quantitative ways. The target of the study are patients with this disease, information provided by the ward nurses.

Results- From the study I did, where I received information from competent persons and requests for statistics in the regional hospital of Ferizaj, I identified that of most of the 31 persons, 58% of them were male and only 42% female. This may be due to the lifestyle that most men have. Of these, 16 persons were over the age of 50. It appeared from these data that it was concluded that pneumonia is more easily caused in older persons due to the weakening of the body's immune system and the presence of other diseases. The research also shows that it is more concentrated by patients from urban areas (51.6%), compared to patients and rural areas (48.4%). CONCLUSION - Pneumonia, like any other disease, requires special care. As nurses, we must recognize the signs of this disease and provide adequate care. Each patient who comes to us with the characteristic symptoms of this disease must be offered special and continuous care until we find that he does not have a serious problem.

**Keywords:**CAP-Community-acquired, pneumonia.

# Lotus Petal Flap Reconstruction of the Labia Major and Perineum after Necrotizing Fasciitis Infection

Zejnë Buja

**Abstract.** Introduction Necrotizing fasciitis is one of the most serious and deadly infections in surgery. The tissue defects that result after a severe infection with necrotizing fasciitis are often not easy to resolve surgically. Case presentation We present a 71-year-old female case with necrotizing fasciitis infection and defect of the region of the vulva (labia major) and perineum. We solved the reconstruction of the defect of the lower half of the labia major and the perineum, on the left side, by raising a fasciocutaneous lotus petal flap along the gluteal fold, based on two perforators. Discussion Considering that the necrotizing fasciitis infection is a very serious infection, it is also accompanied by large soft tissue defects. Raising the flap based on two perforators gives it greater vascular security and, at the same time greater success in survival. Conclusions We can conclude that the reconstruction of defects of the vulva and perineum with a lotus petal flap is a satisfactory solution and acceptable to the patient.

## AMH, FSH and Female Infertility

Afrim Zeqiraj

**Abstract.** Background: Infertility is a complex clinical condition affecting both sexes women and men and has a significant influence on their mental status, lifestyle and relationships between them. For all married couples around the world, the desire to give birth to a healthy child is emphasized and this information is also indicated in the United Nations Declaration on Human Rights, Article 16.1, which states that "men and women without any restriction on race, nationality or belief, have the right to marry and build a family". Purpose of work: It is to determine the degree of female infertility of women over the age of 35. Work has been done in the Dukagjini Region in Peja, in the Republic of Kosovo. Materials and methods: Sampling was conducted over a period of time from January 2014 until June 2017, a total of 189 samples, 139 samples for analysis and 50 samples for checks were collected. Measurement of hormone parameters was done with Roche Elecsys's 411 automatic analyzer. The importance of the presentation is at  $p < 0.05$ . Results: From the results, it is seen that all the patients taking the study have found that there are significant changes in the hormones taken in the study (AMH and FSH) between the working group and the control group ( $p < 0.00001$ ). From the study, it has been found that women over the age of 35 have an increase in FSH ( $> 20$ ), while having an AMH ( $< 0.5$ ) decrease. Discussion: Our results and other similar studies indicate that the AMH serum level of the AMH hormone shows ovarian storage and a valid and reliable test for infertility treatment. FSH as a hormonal predictor of infertility is significantly lower than the AMH hormone and the combination of AMH and FSH was not significantly better than the AMH. Conclusion: From this original scientific paper it can be concluded that the determination of the concentration of these two hormones (AMH and FSH) is of great importance as regards the determination of female infertility over 35 yrs of age. From the results of this paper, we have also gained significant values for the decision-making of the healthcare professional as to which IVF/ICSI procedure. In most patients in whom the AMH  $< 0.50$  and FSH  $> 20$  hormone values have been determined, it is recommended by infertility health professionals to use hormone stimulating therapy because ovarian reserves are poor, so without the stimulation therapy the possibility that these females getting pregnant is too small or almost impossible. From this study we have observed in 6 cases that patients who had AMH  $> 4.0$  during the ultrasound examination we found that we have polycystic ovary syndrome (PCOS).

**Keywords:** AMH; FSH; PCOS

# The influence of negative pressure in the treatment of wound infections

Argjiro Alija <sup>1</sup> Njomza Shosholli Peja <sup>2</sup>

<sup>1</sup> Faculty of Medicine, University "Fehmi Agani" Gjakovë

<sup>2</sup> Hospital Royal Medical Prishtinë, UBT Collage Prishtinë

**Abstract.:** Vacuum-assisted closure (VAC), sometimes referred to as microdeformational wound therapy (MDWT) or negative pressure wound therapy (NPWT), has revolutionized wound care over the last 15 years in world. For the average clinicians, finding the best dressing for a specific wound can be a daunting task. In contrast, advanced wound care products such as growth factors, bioengineered skin, and dermal scaffolds are few in number and have more robust clinical data demonstrating their effectiveness, but they are expensive and can be logistically challenging to use. Generally, these products are used only after traditional moist-dressing products have failed or for large wounds.

**Aim:** The purpose of the work was to monitor the results of our patients with sophisticated devices used in the treatment of orthopedic surgical wounds. **Methodology:** This data review reports the results of 10 patients who were treated with vacuum closure (VAC). Prospective data for 10 patients treated with negative wound pressure instillation therapy (NPWT) were recorded and PICO analyzed. The latter part was compared with a retrospective control group of 10 other patients treated with our care therapy without these devices. Both genders have been studied in the clinic. The average age of the patients was 30 years. **Results:** The group of patients treated with Vac was less satisfied about their treatment and comfort than the group of those with PICO who rated it with greater comfort, faster wound healing, less pain or no pain. . Not very accidental when the group of patients with normal therapy of plastic and orthopedic surgical interventions who did not use such apartments were predisposed to once again access the intervention or the operating room as a result of possible complications.

**Keywords:** VAC, PICO, Negative pressure, infection.

# “Management of Intrahospital infections in the Orthopedic Clinic on QKUK “

Luljeta Osmani, Migena Tasholli, Zenuni-Cebeci, Luljeta Osmani Msc, Migena Tasholli Msc, Ariana Zenuni-Cebeci Msc,

University UBT Medical Sciences, Prishtinë, Kosova

**Abstract** Introduction: Infection control in healthcare institutions is a standard of quality and plays a crucial role in the well-being and safety of patients, healthcare workers, and visitors. This discipline encompasses most departments within the hospital and addresses issues related to quality, infection risk management, clinical leadership, health, and safety in the workplace. To ensure a safer environment, Infection Prevention Management must be implemented.

The infection control team should have experience and extensive knowledge in various medical fields, such as infection control, medical microbiology, infectious diseases, and practical nursing procedures. The team should consist of at least one physician and one nurse for infection control.

**Objective:** The main objective of this study is to investigate the opinions of nurses, patients, and visitors regarding the implementation of measures for preventing intrahospital infections in the orthopedic clinic.

The objectives include:

- Assessing the current situation in orthopedic clinics in Prishtina concerning protection against infections acquired within these clinics by staff, patients, and visitors.
- Examining through questionnaires whether the staff is adequately trained with professional personnel for protection against intrahospital infections.
- Providing continuous training to nurses on infection prevention measures.
- Capital investments in new equipment and techniques during work in orthopedic clinics.

**Methodology and Material:** For the research, the orthopedic clinic in Prishtina, SHSKUK, was chosen. The research was conducted using a semi-structured questionnaire, and the approach was quantitative.

Before commencing the research, permission and written consent were obtained from the HEAD NURSE OF THE CLINIC. After collecting data through the questionnaire, each participant was informed about the purpose of the research and how to complete it.

**Study Participants:** Interviewed respondents belonged to three categories within the Orthopedic Clinic:

Study started on date 01. march 2023 until the date 26. may 2023.

1. 20 - Nurses
2. 10 - Patients
3. 10 - Visitors

The study findings clearly indicate the potential risk of infections for all categories of nurses, regardless of qualifications, experience, and age. Not only are these documents not recognized, but there is also no easy access to them, despite their mandatory status as part of their daily work process.

Nurses are not provided with information about proper biomedical waste management, and they lack the necessary knowledge about their impact on the environment, public health, and the national economy.

Based on the study findings, it can be concluded that the level of knowledge and awareness of infection prevention is relatively low, considering the lack of regular annual training, the absence of the implementation of new working methods, inadequate cleanliness, insufficient space, and outdated facilities.

**Recommendations for Action:**

- Identifying deficiencies and shortcomings in the proper management and implementation of the infection prevention plan.
- Developing strategies, plans, and best practices for infection prevention.
- Creating a comprehensive infection prevention plan, appointing a director, nurse, and infection prevention committee.
- Monitoring the implementation of the plan by a qualified person who has received additional training in infection prevention (the director of infection prevention or a designated responsible person).



# Relationship between diet and academic performance of high school students

Dr. Adonis Breznica

"UBT College" Prishtina, Kosovo

**Abstract:** Food has a great impact on our health and performance, especially in the case of students at school. Studies have shown that a balanced diet rich in vitamins and minerals can improve brain function and cognitive abilities in students. On the other hand, lack of proper nutrition and consumption of junk food can negatively affect concentration and academic performance. In this context, it is important to understand how nutritional factors influence the school success of students.

**Objective:** The objective of our research is to understand and analyze the relationship between diet and academic performance of students at High School. Given that nutrition is a crucial factor in individuals' well-being and overall functioning, we aim to determine how dietary habits can impact students' academic success. Through careful surveying and analysis of the collected data, we seek to identify possible connections and relationships between dietary preferences, daily eating habits, and students' academic performance.

**Methodology:** For this study, we included a sample of 90 participants from UBT High School. The selection criteria for this sample were that students had to be enrolled in this school and agree to participate in the research. This sample represented a wide range of students, including both genders, various levels of academic success, and diverse dietary preferences. The use of a limited sample allowed us to gather significant data and draw substantial conclusions regarding the relationship between diet and academic performance.

**Results:** In this study, the influence of diet and various factors on students' academic performance was explored. The questions focused on eating habits, feelings of fatigue, concentration during classes, the impact of diet on academic performance, and students' perception of their own performance. In the first question, students were asked about their fatigue or lack of energy during school hours. The results showed that 35.6% of students often feel very tired, while 26.7% feel tired frequently. This indicates that a significant portion of students experience fatigue during school hours, which can impact their academic performance. The second question investigated concentration during classes. The results showed that 20% of students have significant difficulties in maintaining focus during lessons. This factor can also have a negative impact on students' ability to acquire and retain information during learning. The third question focused on the influence of diet on academic performance. The results showed that 44.4% of students believe that making changes in their diet can somewhat impact their academic performance. This response highlights the awareness among students about the potential link between nutrition and academic success.

**Recommendation:** Based on the findings of this study, it is recommended to promote healthy dietary habits among students at High School to enhance their academic performance. Educating and raising awareness among students about the importance of healthy nutrition and creating a supportive food environment at school can yield long-term results by improving cognitive abilities and concentration.

**Key words:** Diet; Academic performance; Students; High school; Dietary habits

# Migraine headaches in pediatric ages: A study on prevalence, influencing factors, and manifestations in a group of students in Kosovo

Dr. Adonis Breznica

"UBT College" Prishtina, Kosovo

**Abstract:** Migraine headache is the most common type of recurrent headache. It is characterized by episodic attacks that can range from moderate to severe intensity, with focal location in the head, pulsating sensation, and accompanied by nausea, vomiting, sensitivity to light and/or sound.

Migraine has been reported to occur in 10.6% of children aged 5 to 15 years, and up to 28% in older adolescents.

A thorough medical history and physical examination, including a neurological examination focused on the headache, have been shown to be sensitive diagnostic indicators. Neuroimaging is required when the neurological examination is normal or when atypical neurological phenomena occur during migraines.

The treatment goals are to reduce the frequency, severity, duration of headaches, and the disabilities they cause. Objective: To present the types of migraines and the factors influencing their occurrence. To present the frequency of migraine headaches in a school in Kosovo. To analyze the incidence of migraine headaches by gender and age, and to demonstrate the impact of different factors on the onset of migraine headaches, such as the influence of electronic device usage, diet, sleep, and positive family history.

Methodology: The study is part of cohort research. International literature published by authors in this field will also be used, including literature from PubMed, Web of Science, Scopus, and Google Scholar.

Results: The study will show that migraines are observed in a significant portion of students aged 8 to 15 years. The presence of migraines is more pronounced in female students and is influenced by other factors such as irregular eating habits, lack of sleep, and positive family history of migraines. Students with migraine headaches have had absences from school and have experienced disabilities due to this condition. They have also spent more time on electronic devices and have had more limited sleep compared to students without migraines. A thorough medical history and physical examination, including neurological examination, are important tools for diagnosing migraines. Neuroimaging is only required in certain cases when the neurological examination is abnormal or when atypical neurological phenomena occur during migraine attacks. The treatment of migraine headaches in pediatric ages aims to reduce the frequency, intensity, and duration of attacks, minimizing the disabilities and negative consequences it causes in the lives of children and adolescents.

Recommendation: Early identification and assessment of migraine headaches are important. It is crucial for healthcare professionals to have awareness and sufficient knowledge of migraines in children. This will aid in the identification and early diagnosis of this condition, allowing for the initiation of effective treatment as early as possible. The treatment of migraine headaches in children and adolescents should involve a combination of medical and non-pharmacological therapies. This includes the use of specific medications for migraine treatment, as well as relaxation techniques, psychological therapy, and lifestyle changes, such as dietary adjustments, sleep regulation, and physical activity. Providing detailed education and information to patients and their families regarding migraine headaches is important. This includes explaining the symptoms, potential triggers, treatment, and management strategies for migraine headaches, as well as assistance in identifying provoking factors such as food, stress, lack of sleep, and excessive use of electronic devices.

**Keywords:** Migraine headache, Children, Prevalence, Factors, Influence.

# IC-FOOD SCIENCE AND NUTRITION

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# Assessment of the Quality of Packaged Drinking Water Through Microbiological and Physico-Chemical Analyses in Kosovo

Bahtir Gashi, Fidan Feka\*, Smajl Rizani, and Arianeta Nura

Food Science and Agriculture, UBT-Higher Education Institution, Kosovofidan.feka@ubt-uni.net

**Abstract.** The use of bottled water is constantly increasing in the world in recent decades and this is expected in countries in transition, such as Kosovo. This work aims to analyze the water in the Kosovo market from local producers and the water imported to Kosovo to verify if they meet the physico-chemical and microbiological conditions. In this paper, sixteen (16) water samples were taken, which were consumed the most in our country, and were analyzed in accordance with Administrative Instruction No. 10/2021 of the Republic of Kosovo. Bottled drinking water samples were analyzed for some physico-chemical parameters, heavy metals according to the EPA method, while part of the microbiological parameters such as: (*Escherichia coli* - ISO 9308-1:2000, Enterococci - ISO 9308-1:2000, *Pseudomonas aeruginosa* - ISO 1626 calculated at 22 °C-ISO 4833:2003, Colonies calculated at 27 °C-ISO 4833:2003). As for the physico-chemical parameters, although in the analysis of these 16 samples, we have a deviation of the parameters that is described on the label with the obtained results, they do not exceed the reference standard values for drinking water.

**Keywords:** Bottled water, the importance of drinking water, Application of analytical techniques.

# Determination of Physicochemical and Microbiological Analyses in the Determination of Rheological Quality in Turkish Delight

Lorikë Salihu [0000-1111-2222-3333] and Sara Spahiu [0000-1111-2222-3333]

<sup>1</sup> UBT Collage, Prishtinë, Republic of Kosovo

lorike.salihu@ubt-uni.net

**Abstract.** “Llokum” is one of the traditional Turkish sweets that has a very important place as agastro-nomic value and cultural heritage. The beginning of the production of Turkish delight began in the 15<sup>th</sup> century, but it took its final form in the 19<sup>th</sup> century. “Llokum” was first called "Lumps of Delight" and then it is known worldwide as "Turkish Delight" and has impressed people with its taste. For the production of high-quality, the ratios of sugar, starch, water, citric acid, baking time and temperature must be constantly monitored. For this paper, three types of local products of Kosovo were analyzed and from the analyzes achieved during this research, we concluded that the pH is lower in locums with fruit content and the acidity is higher. Humidity depends on temperature and time. Where the structure of the Llokum also depends on the temperature, because with an increase in temperature, the crystal bond of starch is broken. The Brix scale is a very important parameter in the preparation of Llokum and must be measured during each preparation stage, because it affects the synthesis of sugars and the latter in gelatinization.

**Keywords:** Turkish Delight, physical and microbial parameters, texture

# Biodiesel synthesis from different waste cooking oil

Betime Saliu, Edona Tahiri, Miribane Dërmaku-Sopjani, Arleta Rifati-Nixha

<sup>1</sup>Chemistry Department, Faculty of Mathematical & Natural Sciences, University of Prishtina, Prishtina, 10000, Republic of Kosovo

arleta.rifati@uni-pr.edu

**Abstract.** The object of this study is extraction and characterization of biodiesel from waste cooking oil using trans-esterification methods. All experiments were replicated and results were evaluated. This work considers the use of different oils and different use levels for the production of alternative renewable and environmentally friendly biodiesel fuel as an alternative to conventional diesel fuel. The oil was trans-esterified to biodiesel using oil to alcohol ratio of 5:1 and KOH as catalyst. The physico-chemical properties of the biodiesel obtained during the experiment were: viscosity in room temperature, density, cloud point, boiling point, fire point, saponification value, acid value, water determination. The products were further evaluated by comparing with the ASTM standard and it was concluded that waste cooking oil that was collected from restaurants and overall used more, gives a lower amount of biodiesel than the waste oil that was used just one time. Also, the IR spectroscopy results were compared with each other and with the ASTM specification standard.

**Keywords:** Waste cooking oil; Biodiesel; Physicochemical properties; Petroleum diesel

# Environmental Protection and Management

Ibush Luzha, Fidan Feka, Berat Durmishi

UBT-Faculty of Food Sciences and Biotechnology, Pristine, Kosovo

ibush.luzha@ubt-uni.net  
fidan.feka@ubt-uni.net  
berat.durmishi@ubt-uni.net

**Abstract.** Environmental management and protection are the key challenges of the 21st century. Population growth and economic development have brought negative impacts on the environment. It is important to take measures to reduce the negative impact and to preserve and recover the environment. Environmental management involves the development of policies and strategies to promote sustainable development, as well as to prevent actions harmful to the environment.

Environmental protection includes individual and collective actions to preserve natural resources and reduce the negative impact of human activities. This includes implementing sustainable practices, such as using natural resources sufficiently and efficiently, recycling waste, and taking care to preserve biodiversity.

Environmental management and protection are complex challenges, but with the joint commitment of governments, non-governmental organizations, and individuals, we can build a sustainable future and protect our natural heritage for future generations.

**Keywords:** Environment, Management, Sustainable development, Human activity

# Development of Models for Predicting Trihalomethanes in Drinking Water: A Case Study of Tetova, Republic of North Macedonia

Bujar H. Durmishi<sup>1\*</sup>, Arbana Durmishi<sup>1</sup>, Pajtim Bityqi<sup>2</sup>, Osman Festoshi<sup>2</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.** The aim of this paper has been the development of advanced mathematical models for predicting the levels of trihalomethanes (THMs) in drinking water. THMs are disinfection byproducts formed when disinfectants like chlorine react with natural organic matter in drinking water. These compounds pose a particular concern for public health, including cancer and reproductive issues. In this study, a comprehensive dataset of one-year THM results and 15 physicochemical parameters of the drinking water in Tetova city was used to develop 22 mathematical models for predicting THM concentrations. The statistical software SPSS was used for model development, and statistical technologies were applied to identify complex relationships between different drinking water variables (parameters) and THM levels. The developed prediction models exhibited excellent performance in estimating THM concentrations. They are the first of their kind in the region, highly applicable, and serve as powerful tools for predicting THM formation in drinking water. These models are highly valuable for researchers, water utility officials, and health authorities to monitor and prevent elevated THM levels in drinking water, even in other regions with similar water characteristics as Tetova. The developed models will assist researchers, water utility companies, and regulatory agencies in assessing and managing THMs in drinking water. This will significantly contribute to improving the quality of drinking water and public health.

**Keywords:** THMs, predicting models, drinking water, water quality, public health.



# Investigating Aflatoxin M1 Contamination in Milk Samples: A Comprehensive Study in Kosovo

Hasime Berisha<sup>1</sup>, Demokrat Nuha<sup>1,2\*</sup>, Berat Durmishi<sup>1</sup>, Pajtim Bytyci<sup>1</sup>, Osman Fetoshi<sup>1</sup>, Mergim Mestani<sup>1</sup>

<sup>11</sup> Food Science and Biotechnology, UBT-Higher Education Institution, Kalabria, str. Rexhep Krasniqi Nr. 56, Prishtina 10000, Kosovo

<sup>1</sup> Faculty of Pharmacy, UBT-Higher Education Institution, Kalabria, str. Rexhep Krasniqi Nr. 56, Prishtina 10000, Kosovo

demokrat.nuha@ubt-uni.net  
demokratnuha@gmail.com

**Abstract.** Aflatoxins, naturally occurring mycotoxins produced by fungi, pose significant threats to human and animal health due to their carcinogenic, mutagenic, and immunomodulatory properties. Aflatoxin M1 (AFM1), a derivative of aflatoxin B1 (AFB1), is of particular concern as it contaminates milk and milk products, impacting global food security. This research aims to assess the prevalence and implications of AFM1 contamination in milk within the Kosovo market. In this study, the enzyme-linked immunosorbent assay (ELISA) was employed to determine AFM1 levels in 15 milk samples collected from various sources in Kosovo. The research assessed the prevalence and overall distribution of AFM1 contamination, identified potential sources of contamination, and determined compliance with regulatory standards. Additionally, a comprehensive human health risk assessment was conducted to evaluate the health implications of exposure to AFM1 through milk consumption. These findings will contribute valuable knowledge to enhance food safety measures, public health policies, and risk mitigation strategies in the Kosovo dairy industry. Recommendations will be made to mitigate AFM1 contamination, including improvements in storage conditions, quality control measures, and regulatory enforcement. Dissemination of the results will raise public awareness and promote safer milk consumption practices. Is.

**Keywords:** Aflatoxin M1, Milk contamination, Food safety, Kosovo dairy industry, ELISA analysis, Health risk assessment

# Monitoring the quality of liquid petroleum derivatives and their environmental impact - case study Kosovo

Besa Veseli, Kliton Bylykbashi, Shqiprim Ahmeti, Vehebi Sofiu

Institution of Higher Education, UBT-College

besa.veseli@ubt-uni.net  
kliton.bylykbashi@ubt-uni.net  
shqiprim.ahmeti@ubt-uni.net  
vehebi.sofiu@ubt-uni.net

**Abstract.** This scientific work with a focus on "Monitoring the Quality of Petroleum Derivatives and Environmental Impact - Case Study Kosovo" focuses on the systematic exploration of monitoring the quality of liquid petroleum derivatives traded in the Republic of Kosovo and their effects on the surrounding environment and population health.

From a scientific perspective, the objective of this study will be to examine the quality of hydrocarbons traded in the Republic of Kosovo, the implementation of international and national standards, and the impact of quality on the performance of vehicles using or planning to use these fuels. This will analyze the indirect effect of oil quality on the environment, while establishing the interconnectedness and elaborate the correlation between derivative quality and environmental sustainability. From a social and institutional standpoint, our work will facilitate the identification of the real situation regarding the quality of liquid petroleum fuels used in Kosovo, and the necessity for their continuous monitoring in collaboration with other competent institutions, with the aim of preserving the environment for the present and future generations. The study has analyzed parameters for samples of diesel, gasoline, kerosene, and lubricating oils traded in the Kosovo market since 2015 and onwards, as well as their distribution, based on the parameters set by the Administrative Instruction of Kosovo and International Standards. This is done to determine the number of samples that deviate from the standard. The samples have been analyzed at testing laboratories following the EN 17025 standard, such as "Kosova Lab" in Pristina, "Sierra Lab" in Pristina, and "Ex Fis Labs". Data for the analysis of hydrocarbon quality have been obtained from the certified Inspection Body according to the 17020 standards, "AdriaInspekt Kosovo," in Pristina, Kosovo, based on official reports issued by laboratories and inspection bodies. Computer programs have been used for the quality assessment of diesel samples, enabling the determination of parameters included in International Standards, as well as the presentation of results observed in the analysis reports of testing laboratories. The work is primarily based on the quantitative research method, while descriptive and deductive methods have been applied to initially elaborate on the theoretical impact of oil quality on the environment.

**Keywords:** Petroleum liquid derivatives, Environmental sustainability, Lubricating oil, Standards, Monitoring.

# The effects of hygiene and good manufacturing practices on the quality of fresh milk in some farms in the Gjilan region

Medin Zeqiri<sup>1</sup>, Xhavit Bytyçi<sup>1\*</sup>, Mërgim Mestani<sup>1</sup>, Valon Derguti<sup>1</sup>, Fidan Feka<sup>1</sup>, Vezir Januzi<sup>1</sup>, Ylli Biçoku<sup>2</sup>

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

<sup>2</sup>Agricultural University of Tirana

xhavitbytyçi@ubt-uni.net

**Abstract.** The research is important because it highlights the deficiencies that milk producers have in implementing proper hygiene practices in dairy cow stalls, which have an impact on milk quality. The study was conducted in three Municipalities of the Gjilan region (Vitia, Kamenica and Gjilani), Kosovo. Data were collected during April-May 2021 for the years 2019 and 2020. A structured questionnaire was used to collect all information related to milk quality. The questionnaire was designed to capture information related to general farm characteristics, number of dairy cows, use of mastitis tests, presence of lactofreezes for milk, pre-milking udderhygiene practices, udder disinfection and use of cleaning wipes etc. Out of 71 farms surveyed, 47 of them or 66.2% reported that they did not have lactofreezes for milk cooling, while only 24 farms or 33.8% had lactofreezes for milk cooling. Farms with lactofreeze, on average, have more experience (18.87 years), while those without lactofreeze have less experience (14.7 years). The surveyed farms, based on milk quality, were: 16.9% or 12 farms of extra class, 29.6% or 21 farms in the first class and 4.2% or 3 farms in the 2nd class, while 35 farms were below the quality standards. 84.5% or 60 farms clean the cow's udder with warm water, while 15.5% or 11 farms with cold water. 48 farms use the same wiping cloth for two or more cows. 32.4% or 23 farms were controlling mastitis. To assess the effects of udder disinfection in relation to milk quality, half of the farms fall below the national minimum standard. We recommend the relevant institutions, local and central, to encourage farms to improve quality by offering them technical and financial support through associations, advisory services and other interested parties.

**Keywords:** hygiene, good production practices, milk quality, farm

# Color intensity and flowering period of some cultivars of garden roses

Nexhat Balaj, Hyzer Rizani, Naser Kamberi, Shkumbin Shala

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

nexhat.balaj@ubt-uni.net

**Abstract.** The flower color and length of the flowering period are very important factors that contribute to the garden beauty. Among the ornamental plants, the rose (*Rosa* sp. L.) is the most favorite and beloved of all garden plants. The rose is one of the most popular plants from the group of ornamental plants in Kosovo, which is widely used in the decoration of gardens, flower beds, planted in various vases as well as flowers for bouquets, etc. The decorative effect of roses depends from the duration of the flowering period that is regulated by many factors such as cultivars, environment and growing conditions. This study is focused on physiological factors that regulate flower longevity and color persistence in roses that are generally used for garden decorations. Five commercial cultivars were studied in our experiment: 'Duble Delaght', 'Cristophor Colombo', 'Vaj Vicend', 'Preincess de Monoco', 'Anne Denneke', and Eiffel Tower. The flowers of the rose can be single in a flower stem, or clustered in inflorescences of 3-25 flowers. Species and cultivars have a specific genetic background that affects the time of flowering, type of flowering, type of flower, repeat-flowering, resistance and tolerance to abiotic stresses such as low temperatures etc. Roses are distinguished by the variety of flower colors, pleasant aroma, long flowering, and its repetition during the summer (re-blooming), they grow easily and in different types of soil.

**Keywords:** roses, flower color, garden, flower longevity, color.

# Testing of some herbicides in Maize culture

Mufail Salihaj<sup>1\*</sup>, Hysni Tahiri<sup>2</sup> and Diellon Salihaj<sup>3</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

**Abstract.** Maize is the second crop in Kosovo, occupying a significant area of 40-60 thousand ha per year. The cultivation of this true crop is accompanied by many problems in terms of protection from unwanted weeds or spontaneous weeds, which are considered the biggest enemy of yield reduction. In this context, the use of selective herbicides to destroy these weeds has become a mandatory routine measure for every producer of this crop. The choice of the appropriate herbicide and the combination of these herbicides requires expertise and solid knowledge in the field of plant protection. In this work we have tested some herbicides which are applied more often in our region and more widely. The experiment was carried out in the region of Lipjan and for the study we took these herbicides: Monsoon active- with active ingredients Foramsulfuron 31.5g/l, Thiencarbazone methyl 10g/l (Produced by Bayer Crop-Science Germany) with Cyprosulfamide Protectant 15g/l. Then Milagro herbicide with nicosulfuron substance produced by Syngenta. and the next herbicide that was taken for experiment is Nicozea with nicosulfuron active substance 40g/l by combining with Diovid 60 SL – 2,4-D (DMA) dimethyl ammonium 600g/l. The treatment was done at the 2-4 leaf stage of the three plots and the dose was respected according to the manufacturer's declaration. The mentioned herbicides were used in experimental plots and their results were compared with the untreated plot and their differences were significant.

**Keywords:** Corn, herbicide, experiment, unwanted weeds, parcel

# Monitoring of the CIP system safety based on microbiological and physico-chemical indicators

Luljeta Ajdini, Arianeta Nura, Fidan Feka, Emine Daci Zejnullahi, Veton Haziri, Irena Spaqi

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

luljeta.ajdini@ubt-uni.net

**Abstract.** In this paper we have presented the determination of the safety of the CIP system based on microbiological indicators: total bacteria, yeast and mold and physico-chemical parameters. The sanitation procedure known as Clean in Place (CIP) is quite popular in the food industry as it protects customer safety and quality while also reducing operational risk, water, chemical and energy costs. The Clean in Place process operates according to a standard protocol, but the implementation of the system and processes by each process is specifically tailored to meet its requirements. Chemical and water tanks, feed and return pumps, heat exchangers, conductivity sensors and temperature gauges are the main components of Clean in Place. The purpose of this paper was to monitor the CIP system in the food industry, because this is an important system for preventing product contamination, such as spoilage.

**Keywords:** Clean, food technology, CIP systems, yeast, mold

# Exploitation of UV light/TiO<sub>2</sub> in the depolymerization of lemon pectin

Betim Hajdari\*, Svatopluk Henke, Simona Gillarová, Tomáš Svoboda, Vladimír Pour and Zdeněk Bubník

University of Chemistry and Technology, Prague, Technická 5, Dejvice, 166 28

hajdari.Betim@vscht.cz

**Abstract.** Pectin oligosaccharides (POS) and its main monomer, galacturonic acid, are found to possess strong prebiotic activities. This work deals with the depolymerization of lemon pectin by using UV light in the presence of TiO<sub>2</sub> under different temperatures and pH values. The solution of pectin is obtained by mixing lemon peel powder pectin with distilled water and by adjusting the pH with sulphuric acid or sodium hydroxide. The samples were evaluated for the content of monosaccharides by using HPAEC-PAD. The best medium for pectin depolymerization resulted to be in alkaline medium at 50°C.

**Keywords:** Pectin, Depolymerization, UV/TiO<sub>2</sub>, Prebiotics.

# Concerns about the high content of acrylamides in food: A comprehensive review

Violeta Lajqi Makolli<sup>1</sup>, Mergim Mestani<sup>1\*</sup>, Blend Broqi<sup>2</sup>

<sup>1</sup>UBT Higher Education Institution, Prishtina, Kosova

<sup>2</sup>M&Silloso, Xerxe, Kosova

violeta.lajqi@ubt-uni.net

**Abstract.** Acrylamide's presence in food has recently drawn considerable interest on a global scale. One of the antecedents of acrylamide is asparagine, an amino acid that is frequently present in both plant and animal proteins. Acrylamide is listed as a potential cause of cancer, abnormal birth outcomes, and nerve damage in people. It appears naturally in foods that have been heated to high degrees as a synthetic chemical. Acrylamide is generally associated to the Millard reaction, which is prevalent in foods that mostly contain asparagine and starch, and forms during high-temperature cooking such as frying, roasting, and baking. According to the FDA, although it's unclear exactly what risk acrylamide poses to humans, research investigations in animals' labs demonstrate that excessive quantities of the chemical caused cancer. Since acrylamide exposure is so high, it's important to recognize its hazardous effects, especially in nations where people are still mostly unaware of the danger's acrylamide poses to their health. This article gives a summary of relevant scientific data on the production of acrylamide, its potential health risks, and methods for reducing it in the food industry and at home. Depending on the producer, cooking time, temperature, and production process, different foods contain different amounts of acrylamide. To control the manufacture and use of acrylamide, some nations have put regulations and laws into place. For the purpose of regulating the manufacture and use of acrylamide, maximum amounts of acrylamide in foods have been established in the USA, Europe, Japan, and Canada, and which are expected to be updated in the coming year.

**Keywords:** Acrylamide, asparagine, food, hazardous effects, human health



# WEIGHT GAIN DURING THE FIRST AND SECOND TRIMESTER OF PREGNANCY, AND ITS IMPACT ON SUBSEQUENT DISEASES SUCH AS HYPERTENSION AND GESTATIONAL DIABETES

Eglantina Kraja Bardhi<sup>1</sup>, Egzona Isufi<sup>2</sup>

<sup>1</sup>UBT Higher Education Institution, Prishtina, Kosova  
<sup>2</sup>Spitali Kavaja, 10000 p.n., Prishtinë, Republika e Kosovës

**Abstract.** Maternal diet during pregnancy can affect the likelihood of gestational diabetes and gestational hypertension disorders. The importance of this study is, as it gives us the opportunity to have important information about the phenomenon of nutrition and its impact on weight gain and various diseases during pregnancy. Information was obtained through questionnaires. 300 pregnant women over the age of 18 healthy and mentally capable during pregnancy in hospitals in the territory of Kosovo. According to our results, it turned out that the greater weight gain of pregnant women until the second trimester of pregnancy than the OMI recommendations can affect the health condition of the mother, such as hypertension and gestational diabetes. Weight gain during the first trimester of pregnancy was completely dependent on pre-pregnancy weight. The average weight of mothers before pregnancy was 65.8 kg, while in the first trimester the average weight has reached 67.8 kg, i.e. with an increase of 2 kg, while for the second trimester, the average weight turns out to be 72.3 kg, which indicates an increase in weight of 6.4 kg. Also, mothers with the lowest weight before pregnancy have the highest weight gain than those mothers who gained more weight during pregnancy. 46 or 15.3% had a problem with Hypertension during pregnancy, while 18 or 6.0% had a problem with Gestational Diabetes. There is a relationship between pre-pregnancy weight and weight during the first trimester of pregnancy, and according to the results, a strong correlation is seen, which shows that weight gain during the first trimester is closely related to the weight the mother had before pregnancy. The results obtained from the data analysis show a strong relationship between weight gain in kg during the second trimester of pregnancy with the problem of hypertension and gestational diabetes.

**Keywords:** pregnant women, hypertension, gestational diabetes, nutrition

# Mediterranean diet: a healthy life style

Xheneta Osmani <sup>1</sup> Hyrije Koraqi <sup>1</sup>

<sup>1</sup>UBT-Higher Education Institution

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

**Abstract.** The Mediterranean diet is a popular and well-known dietary pattern that is inspired by the traditional eating habits of people living in countries bordering the Mediterranean Sea. It is often touted for its potential health benefits and has gained recognition for its role in promoting overall well-being and reducing the risk of various chronic diseases. Here are some key characteristics of the Mediterranean diet: Emphasis on whole foods, olive oil, lean protein, fish, moderate dairy, limited red meat, wine in moderation, herbs and spices, plenty of fruits and vegetables, nuts, and seeds. Social and lifestyle aspect: The Mediterranean diet is not just about food; it also emphasizes the social and cultural aspects of dining. Sharing meals with family and friends is encouraged. The Mediterranean diet has been recognized by UNESCO (the United Nations Educational, Scientific, and Cultural Organization) as an Intangible Cultural Heritage of Humanity. It is important to create mechanisms and strategies to promote and inform the local population about the benefits of Mediterranean diet, promoting a healthier lifestyle and food patterns.

**Keywords:** Mediterranean diet, Healthy, Lifestyle, Eating habits

## European rose chafer on cultivated high bush blueberries

Maxhun Shehaj, Erzen Shehaj, Elbasan Çekaj, Agrinë Naqa, Blerinë Krasniqi

College UBT – Higher Education Institution Lagjja Kalabria, 10000 Prishtinë

maxhun.shehaj@ubt-uni.net

**Abstract.** The purpose of this study was to verify if European Rose Chafer (*Cetonia aurata*) is a harmful insect in the cultivated blueberry plants, a new crop cultivated for the first time in the area of the study. The observation has been done from the flowering initiation up to the end of the harvest on three blueberry varieties: Duke, Legacy and Huron. Three rows per variety with 90 plants per row were object of the study. Countings were implemented on 15 plants per row randomly selected in both ends and mid of the row. No any damage by the Rose Chafer has been recorded at the blueberry flowering period neither during the fruit formation. Damages on the ripened fruits were recorded in the second week of June that corresponds with intensive Duke Variety ripening. The insects were collected with dense net bags so that the entire bush was covered with the bag and the insects were shaken out into the bag. Then their counting was done. This procedure is repeated 3 times: morning, mid-day and afternoon. 25.5% of the observed Bushes of the Duke variety were recorded with insects' presence compare to 5.55 of Legacy and 3.33% of Huron variety. Significant Fruit damage was recorded on Duke Variety. The damage percentage varied over the harvesting periods: 29% of fruits in the first harvest resulted damaged, 13% in the second harvest and 8% of the fruits were damaged during the third harvest period. Damaged fruits of Legacy and Huron variety were minor.

**Keywords:** European rose chafer, *Cetonia aurata*, Cultivated Blueberries

# Household investment model – Recursive inter-temporal programming model

Fisnik Shaqiri<sup>1</sup>, Alban Lika<sup>2</sup>

<sup>1</sup>UBT College – Higher Education Institution, 10000 Prishtinë, Kosova;

<sup>2</sup>Sapienza University of Rome, Department of Economics and Social Sciences, Italy

fisnik.shaqiri@ubt-uni.net  
alban.lik@uniroma1.it

**Abstract.** The instability of food prices and high inflation rates have created uncertainties about the food supply chain operational process. The fluctuation of prices for food and agriculture commodities can be linked to several reasons, unstable demand and supply of the food chain, price volatilities for major food commodities, competitions and regulations, and mainly due to the conflict between Russia and Ukraine which caused a shortage of many products of the food supply chain. Agriculture is a strong factor in the economic cycle nevertheless resource scarcity and high input prices have hit the hardest in this sector by making inaccessible inputs to farmers in several countries. The research aims to present the methodology developed in the context of this study and to discuss the design and calibration problems associated with a recursive-inter temporal dynamic programming model for the case of local farmers. The main objective is to simulate farm households' reactions to policy and market scenarios. The goal is to quantify costs and net present value associated with a different farming system for one or several farms and timeframe. First, is expected to explain how long-term trade-offs affect the operating profit. Second to test the economic viability and farm cropping system under a spectrum of real and hypothetical changes in policy scenarios. The model is anticipated to be written and solved in GAMS software and from model optimization, it is expected to understand farms' strategic farming systems and investment decisions. In addition, from the application of the model, it is foreseen to have a clear understanding of how loan and discount rate value impact farms strategic decisions over time. The model can be easily applied to similar farming systems for different scenarios. Ultimately, the simplicity of replicating the model in other areas may aid government agencies to advise the private sector in their farming strategic decision to optimize their profit.

**Keywords:** dynamic programming, economic modelling, local farmers, investment.

# Pollution of the Drenica River by physical-chemical parameters for this year 2022

Shkumbin Shala<sup>1,2\*</sup>, Mentor Shala<sup>2</sup>, Shpresa Thaqi<sup>2</sup> Hzyer Rizani<sup>2</sup>, Fidan Feka<sup>2</sup>, Nexhat Balaj<sup>2</sup>

<sup>1</sup>University for Business and Technology, Pristina, Kosovo, ORCID ID: 0000-0003-1167-5962,

<sup>2</sup>Faculty of Natural and Technical Sciences, Goce Delcev University, Stip, Macedonia

shkumbinshala@hotmail.com

shkumbin.shala@ubt-uni.net

**Abstract.** The lack of vegetation for environmental protection is a significant global issue, and Kosovo is particularly vulnerable to pollution from urban, industrial, and wastewater sources. This official research aims to address pollution in the Drenica River. The Drenica River, spanning 47.6 km, is the largest left-bank tributary of the Sitnica River, covering an area of 446.4 km<sup>2</sup>. The average flow rate of the Drenica River into the Sitnica River is 2.0m<sup>3</sup>/s. In this study, we assessed the pollution levels in the Drenica River by analysing various physical and chemical parameters. These parameters include heavy metals, dissolved oxygen, oxygen saturation, chemical oxygen demand, biochemical oxygen demand, total organic carbon, nitrates, detergents, phosphate ions, chlorides, phenols, turbidity, and others. Water samples were collected at three locations for over ten months to ensure accurate results. The samples were analysed in the laboratories of the Kosovo Hydro Meteorological Institute, utilizing methods such as absorption atomic spectrometry, spectrophotometry, and UV - vis spectrophotometry.

**Keywords:** water, chemical parameters, physical parameters, pollution

# **Analysis of some microbiological and physicochemical parameters of-water as a raw material for the production of non-alcoholic beverages**

Ardit Hoti, Agon Aliu, Namik Durmishi

<sup>1</sup>UBT Higher Education Institution, Prishtina, Kosova

ardit.hotijw@gmail.com

**Abstract.** One of the main ingredients of soft drinks is water, which makes up about 86%-94% of the volume of drinks. Soft drink manufacturers face unique challenges in the field of water treatment. Water sources, water treatment processes and treatment wastes can affect the quality and (microbiological) safety of the final product. The aim of this paper is to analyse some qualitative and bacteriological safety parameters of untreated and treated water in one of the non-alcoholic beverage production industries in our country. 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, water hardness, residual chlorine, and some bacteriological parameters were also analysed, such as total bacteria and E. Coli. 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, standards.

# Detection of dimethyl dicarbonate in multi-fruit juice petpack with Velcorin (DMDC) indicator paper

Ardit Hoti, Agon Aliu, Namik Durmishi

UBT Higher Education Institution, Prishtina, Kosova

ardit.hotijw@gmail.com

**Abstract.** One of the problems of microbiological contamination in the non-alcoholic beverage production industry is during the filling of liquid in Polyethylene terephthalate (PET) bottles. Even if all strict rules have been implemented during the production of non-alcoholic beverages, after the pasteurization of non-alcoholic beverages, one of the main problems remains the filling of liquid in pet bottles. For the reason that, microorganisms are found everywhere in the ambient air, in bottle caps. For this reason, dimethyldicarbonate (DMDC) is approved for use in a wide range of non-alcoholic beverages. Dimethyldicarbonate is injected after pasteurization of the juice and before the process of filling the juice and closing the bottle. The aim of this paper is to detect dimethyldicarbonate (DMDC) during the injection of dmhc, and the detection of dmhc in the final product at different hours to see if dmhc has remained in the liquid or has been completely hydrolyzed. We did the dmhc detection test with velcorin indicator paper.

**Keywords:** Dimethyl dicarbonate, velcorin indicator paper, multi-fruit juice, PET

# Performance of Three Lettuce Cultivars (*Lactuca Sativa*L.) Grown in the NFT (Nutrient Film Technique) Hydroponic System

Ismet Babaj, Shpetim Salihu\*, Blerina Krasniqi, Drilon Morina, Agrinë Neqa, Liridon Krasniqi, Aurora Beqa, Berat Hashani, Hysni Tahiri

UBT Higher Education Institution, Lagjja Kalabria p.n., PrishtinaKosova

salihushpetim6@gmail.com

**Abstract.** This study aimed to evaluate the agronomic performance of three commercial cultivars of lettuce (Dubared, Dubagold, and Batavus) cultivated in the NFT (Nutrient Film Technique) hydroponic system. The experiment was conducted in a greenhouse at the UBT campus in Lipjan municipality of Kosovo. An equal number of three-week-old lettuce seedlings for three experimental units were transplanted in plastic tubes designed for the NFT hydroponic system and were equally treated with the same nutrition solution. The effect of the NFT hydroponic system on yield (gr/variant), the weight of the root system (gr/variant), total plant weight (gr/variant), dry matter of leafy matter, roots, and total plants (gr/variant) were estimated. The results of the experimental data revealed that lettuce cultivar Dubagold recorded significantly the highest yield (956.55 gr/variant), root weight (262.52 gr/variant) and total plant weight (1,219.07 gr/variant) was higher compared with cultivar Dubared yield (774.36 gr/variant), root weight (172.34 gr/variant) and total plant weight (946.70 gr/variant) No significant differences exist between the Dubagold and Batavus on estimated parameters. The same results were achieved for dry matter for three lettuce commercial cultivars.

**Keywords:** Lettuce, hydroponic system, fresh weight, dry weight



# The influence of social media on eating habits

Diana Sejdiu Shala, Laura Binxhija Qeska, Florent Bojku

Department of Psychology, UBT - Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë,  
Republic of Kosovo

**Abstract.** This research is about the impact of social media and influencers on eating habits. The study's main purpose is to examine social media's impact on nutritional habits. The object of the study was 50 citizens of Peja and the region, regardless of age and gender, who have encountered at least one social media influencer that has had a positive or negative impact on their eating habits. 50 citizens of Peja and the region participated in this research. From the total number of citizens in terms of gender, 40.0% are male and 60.0% are female. For the realization of this research, the survey was used. The data were analyzed with the Microsoft Excel package.

Based on the descriptive data, we can conclude that social media has a negative impact on eating habits. Exposure to unrealistic body standards and unhealthy food content on social media can lead to disordered eating habits, such as restrictive dieting and binge eating. Social media can also promote unhealthy eating habits by encouraging the consumption of processed and high-calorie foods.

**Keywords:** social media, influencers, eating habits

# Consumer Perception and the Environmental Impact of Fast-Food Packaging

Azra Nuhija, Violeta Lajqi Makolli\*

UBT Higher Education Institution, Prishtina, Kosova

[an64602@ubt-uni.net](mailto:an64602@ubt-uni.net)

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

**Abstract.** Fast food packaging represents a pervasive yet often overlooked facet of modern dining, bearing both convenience and significant environmental challenges. This study investigates how consumer awareness of the environmental consequences of packaging materials influences their preferences and behaviors. It explores consumer preferences for materials perceived as more eco-friendly, such as paper-based options over plastics, and the consequential impact on disposal practices. This study used quantitative research to investigate consumer perception and the environmental impact of fast-food packaging. It was conducted through a Google Docs survey, to which approximately 250 people responded. The data tool used to analyze the answers from respondents is the IBM SPSS program, through which the statistical and graphic data for the choices in the questionnaire are obtained. Understanding the nexus of consumer perception and the environmental impact of fast-food packaging is instrumental in promoting sustainability within the food service industry. This research provides valuable insights for policymakers, fast food businesses, and environmental advocates working to align the industry with consumer expectations and broader sustainability goals.

**Keywords:** Consumer Perception, Fast Food Packaging, Environmental Impact, Sustainability

# The influence of ecological packaging design on consumer perception of purchasing food products: a case study in Ulqin

Violeta Lajqi<sup>1</sup>, A. Ljukovic<sup>1</sup>, S. Dinaj<sup>2</sup>, S. Makolli<sup>1</sup>

<sup>1</sup>UBT Higher Education Institution, Prishtina, Kosova

<sup>2</sup>UNHZ – Haxhi Zeka University, Peja, Kosova

violeta.lajqi@ubt-uni.net

**Abstract.** Due to environmental problems from food packaging, in recent times the tendency to use different techniques for environmental protection and reducing waste from packaging has increased significantly. The main purpose of this paper is to research and assess the impact of the design of ecological packaging as a method for reducing waste from food packaging, and the impact of the ecological packaging design on consumers' perception of purchasing food products. The research was developed in the form of a review of other researchers as well as through a survey by Google Docs., in Montenegro. The study included 300 people who participated by filling out an online questionnaire. This paper further elaborates on the research findings by comparing age groups, gender, perception of ecological packaging, consumer awareness, and the main problem that pushes consumers not to try to change their lifestyle for a cleaner environment and derives the results of analyses that best summarize the problem and lead to its solution, especially the possibility for its solution. The tool used to analyze the answers is the IBM SPSS program, through which the statistical and graphic data for the choices of the participants in the questionnaire were obtained. This study makes diverse contributions in terms of theory, methodology, and policy-making, and with the recommendation for packaging industries to design packaging with ecological designs that stimulate the curiosity of consumers for their purchase.

**Keywords:** Environmental protection, food package, ecological design

# Research on foodborne infections caused by Giardia Lamblia

Arianeta Nura\*, Luljeta Ajdini, Delvine Hoxha, Violeta Emini

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

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

**Abstract:** Protozoan parasites can infect the human intestinal tract causing serious diseases. Transmission and infection occurs either directly via the fecal-oral route or indirectly by ingesting contaminated water or food. The aim of the current study was to assess the prevalence of *G. Lamblia* among food users in Prizreni region. This study was conducted in 1008 food users during the period January - June 2023. The collected stool samples were investigated using Microscopy during the research of vegetative forms. The advantage of these preparations is that they give a clear insight into the morphological details of the parasite. Giemsi's staining is mostly used. The results showed that: the overall prevalence of *G. Lamblia* in the examined participants was 124/1008 cases. The highest prevalence with 43 cases was found in children aged 2 - 6 years and 34 cases in children aged 6 - 12 years. Based on the obtained results, infected food handlers may be a potential source of intestinal parasitic infections and transmission may occur through contaminated food. Therefore, we suggest increased care, especially in kindergartens and schools where food is prepared, as well as the application of training of food handlers with the aim of increasing awareness and taking measures to reduce the transmission of intestinal parasites.

**Keywords:** Foodborne infections, Giardia Lamblia, prevalence, protozoans

# The impact of participation in international proficiency testing programs for UBT Laboratories

Fisnik Laha<sup>1\*</sup> Hajriz Mazreku<sup>2</sup>, Arbër Sahiti<sup>3</sup>

<sup>1</sup> UBT - Higher Education Institution, Testing Laboratories Center, Prishtina, Kosova.

<sup>2,3</sup> UBT - Higher Education Institution, Construction Laboratory Units, Prishtina, Kosova

fisnik.laha@ubt-uni.net

**Abstract.** When reporting the result of a measurement of a physical quantity, it is obligatory that some quantitative indication of the quality of the result be given so that those who use it can assess its reliability. Without such an indication, measurement results cannot be compared, either among themselves or with reference values given in a specification or standard. It is therefore necessary that there be a readily implemented, easily understood, and generally accepted procedure for characterizing the quality of a result of a measurement, that is, for evaluating and expressing its uncertainty. Participation in proficiency testing schemes is an important starting point for evaluating laboratory performance in certain approaches. Proficiency testing is an independent evaluation of laboratory performance and, as a result, a crucial tool for ensuring the validity and reliability of results. Its primary goal is to assist laboratories in maintaining continuous quality control over their findings and taking remedial steps in order to enhance the level of their measurements and services. It is now widely acknowledged that, even after all known or suspected error components have been evaluated and appropriate corrections have been applied, there is still uncertainty about the correctness of the stated result, that is, a doubt about how well the measurement result represents the value of the quantity being measured.

**Keywords:** Proficiency testing programs, quality properties, expanded uncertainty of measurements, ISO standards.

# Microbiological and physico-chemical analysis of traditional meat products in Prizren region, Kosovo

Brikena Gashi Rashiti<sup>1</sup>, Drita Kutllovci Zogaj<sup>2</sup>, Arbresha Jaka Loxha<sup>2</sup> Medin Zeqiri<sup>1</sup>, Arianeta Nura<sup>1</sup>,  
Flutura C. Ajazi<sup>1\*</sup>,

<sup>1</sup>UBT Higher Education Institution, Prishtina, Kosova

<sup>2</sup>National Institute of Public Health of Kosovo

\*flutura.ajazi@ubt-uni.net

**Abstract.** In human history, meat has been played an important role as food rich in proteins, vitamins and minerals. Today there are lots of meat products that produced and consumed all over the world including our country. The region of Prizren has a well-known and inherited tradition in the production and processing of meat products, making this region attractive and very important for food culture heritage of our country. Even though these products are popular and widely consumed, there is no scientific data regarding the safety and quality aspects of these products. The aim of this study was to evaluate the diversity, physicochemical and microbiological properties of meat products in the Prizren region. A total of 30 samples that included six different meat products were collected in five different locations and transported to the laboratory under refrigerated conditions. The method of preparation, quality and safety of these products, made by artisanal producer were analyzed for *qebapa*, *qofte*, *ushtypka*, *gjevrek*, *virshlle* and sausage. Regarding the ingredients used for preparation of traditional meat products, analyzed in different locations of this region, we concluded that there are no differences between the producers of the same product. The lack of pathogenic bacteria such as *Staphylococcus aureus*, *Escherichia coli*, *Salmonella* spp., highlights the safety of these products in terms of microbiological properties. The physical-chemical analyzes of the meat products investigated in this research were within the permissible standards according to the criteria used by the National Institute of Public Health of Kosovo.

**Keywords:** Prizren region, microbiological analyses, physical-chemical analyses, traditional meat products.

# Mitigating Food Waste in the Retail Sector: Insights from Management Perspectives

Fjolla Ejupi<sup>1,4</sup>, Dhurata Axhami<sup>2</sup>

<sup>1</sup>UBT Higher Education Institution, Prishtina, Kosova

<sup>2</sup>University of Prishtina, Faculty of Agriculture and Veterinary, Prishtina, Kosovo

fjolla.ejupi@ubt-uni.net

**Abstract.** Food waste presents significant social, economic, and environmental challenges. This research focuses on the issue of food waste occurrence within the retail sector and aims to identify the preventive and management practices undertaken by the retail sector to address the problem of food waste. To achieve this, a structured questionnaire survey was chosen as a data collection method and was directed towards supermarket managers. The data collection took place across various supermarkets in different regions of Kosovo. Our findings revealed that most retail managers lack knowledge about food waste management methods. The results indicate that 43% of supermarkets reported not having a food waste management system in place, 25% stated to have one, and 32% did not respond. However, they understand preventive measures for food waste prevention. The results show that 93% of supermarkets control the quality and shelf life of food products and use the first in- first out rule to prevent food waste. This study contributes to the literature by providing valuable insights into the operational approaches employed by retailers to address food waste concerns and concludes by recommending actions necessary for the prevention and reduction of food waste in the retail sector.

**Keywords:** Food waste, food loss, supermarkets, retail

## SOME MEDICINAL PLANTS OF THE SHALA MOUNTAIN

Smajl Rizani, Shkëlzim Ukaj, Hyzer Rizani, Kimete Lluga-Rizani

University for bussines and technology UBT – Prishtinë

shkelzim.ukaj@ubt-uni.net

**Abstract.** Even though Kosovo is a small country with an area that was the object of research for many authors, our research work lies in the area of the Shala Mountains, this area lies in the central part of Kosovo. The height ranges from 650 - 973 m. The research was carried out during the 2021-2023 vegetative period. The objectives of the research: was on the medicinal plants that grow in this region and what was their current state. Plants are closely related to the soil-forming factor such as: substrate, relief form and exposures. In the researched area, the soil has calcareous content and some serpentine fragments. Research methods are based on: collection, herbarium and determination of plants. Medicinal plants are harvested in large quantities and their condition was not good due to indiscriminate harvesting. Herbs: Primula Hypericum, Origano, Malva, Juniperus, Crategus were the most sought after by collectors.

**Keywords:** Shala Mountains, Herbarium, Primula, Hypericum



# EFFECT OF FARMER EDUCATION ON PRODUCTIVITY, FARM MANAGEMENT, AND SUSTAINABLE DEVELOPMENT OF THE AGRICULTURAL SECTOR

Emine Daci Zejnullahi1\*, Xhavit Bytyçi, Elmedina Bajgora

UBT Higher Education Institution, Prishtina, Kosova  
University of Prishtina, Prishtina, 10000, Republic of Kosova

emine.zejnullahu@ubt-uni.net

**Abstract.** The study of the education of farmers is of great importance because farms with educated farmers use more sophisticated techniques and technologies, increase the yield per unit of surface area, make well-informed decisions, and use effective resources to produce healthy and high-quality food. Educated farmers influence sustainable economic growth, create successful businesses influence the country's economy, increase income in rural areas, reduce poverty, and protect the environment. The aim of this paper is to study the effect of farmer education on farm productivity in economic size and its impact on sustainable development. After a comprehensive literature review, an empirical study using a survey face-to-face questionnaire was conducted with 300 farmers in six different agricultural clusters in the Dukagjini plane in Kosovo. The productivity of farms was analyzed by identifying factors influencing productivity. This was done based on the relationship established between farm productivity (dependent variable) and education (independent variable). The collected data were processed using the software program SPSS 17. The educational level of sample respondents showed that 37.2% of farmers are in primary school, 57.7% are in secondary school, 5.13% are in higher education and 12.73% have vocational agricultural school. The results showed a significant average difference between education and productivity of the studied farms. The results obtained from the survey show that level of education has positive effects on the productivity of agriculture. These results suggest that the increased investment in the education of farmers will substantially improve agricultural productivity, effectively contributing to the sustainable development of the agriculture sector and reducing poverty in the country.

**Keywords:** Farmer education, Farm productivity, Sustainable development, Kosovo

# Climate Change and its Impact on Plant Diseases: Current Trends and Future Perspectives

Lumta Dida<sup>1</sup>, Ben Dida<sup>2</sup>

<sup>2</sup>University of Prishtina, Prishtina, 10000, Republic of Kosova

<sup>2</sup>Hybrid Agro, 1st October 32, 10000 Pristina, Kosovo

lumta.dida@ubt-uni.net

**Abstract.** With far-reaching effects on numerous natural systems, climate change has become a major worldwide concern. Plant health, in particular the frequency and severity of plant diseases, is one of the domains where climate change has a significant impact. An overview of the existing knowledge on the connection between plant diseases and climate change is given in this work, with particular attention to the effects on disease dynamics, interactions between plants and pathogens, and agricultural productivity. This research clarifies the mechanisms by which climate change affects the incidence, distribution, and severity of plant diseases by a review of the literature and empirical data, highlighting the necessity of taking preventative action to lessen these negative consequences. It also emphasizes how cutting-edge agricultural techniques and technologies might increase plant systems' resistance to climate change-related.

**Keywords:** climate change, plant, disases

# Investigation of antibiotic residues in fresh cow's milk

Xhavit Bytyçi<sup>1</sup>, Medin Zeqiri<sup>1</sup>, Nazmi Hasanaj<sup>2</sup>

<sup>1</sup> University for Business and Technology-UBT; Prishtine, Republic of Kosovo

<sup>2</sup>University "Haxhi Zeka"; Peja; Republic of Kosovo

xhavit.bytyci@ubt-uni.net

**Abstract.** The presence of antibiotics in milk as raw material for other dairy products is prohibited by legal regulations. The research on the presence of antibiotics in milk was done during the six months (January – June) 2021, including 181 milk samples where 1 sample represented about 3000 liters of milk from an average of 60 farms per day. The analysis of the presence of antibiotics in the researched samples was carried out through the ROSA Pearl Reader Charm device. It turns out that the results range from a low value of 0.014 ppb to a high value of 2.729 ppb and with an average for all samples of 1.460 ppb. The obtained values are below the allowed level and are considered negative results in the presence of antibiotic residues. It seems that farmers respect the withdrawal of antibiotics in milk as a result of raising awareness, also as a result of economic sanctions.

**Keywords:** Milk, antibiotics, residues, results.

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# “Understanding the Socio-Cultural Dynamics of Private Neighborhoods in Pristina’s Urban Development”

Blend Dema

Teaching assistant at Faculty of Architecture and Spatial Planning, UBT College in Prishtina

blend.dema@ubt-uni.net

**Abstract.** In the realm of urban development, the emergence of private neighborhoods has garnered significant attention due to their distinctive socio-cultural dynamics and their interconnectedness with the process of gentrification. This study delves into the complex interplay between urbanization, social stratification, and the gentrification of neighborhoods within these enclosed residential enclaves. By examining the multifaceted factors that influence the formation and evolution of private neighborhoods, including the influx of wealthier residents, this research sheds light on the socio-economic implications and cultural ramifications they pose.

Furthermore, this study explores how the concentration of wealth in these private neighborhoods can trigger gentrification processes in surrounding areas, driving up housing standards and potentially displacing existing communities. Through a comprehensive analysis of planning strategies, governance models, and resident experiences, this research seeks to unravel the ways in which these exclusive spaces impact urban fabric, community interaction, and identity, while also contributing to broader discussions about socio-economic inequality and the effects of urban development on local neighborhoods. By unraveling the dynamics of private neighborhoods and their connection to gentrification, urban planners, policymakers, and sociologists can work toward more inclusive and equitable approaches to urban development.

**Keywords:** urban development, private neighborhood, identity, socio-cultural dynamics, gentrification

# Exploring the Potential of Vertical Public Spaces in Architecture

Blend Dema, Zana Prelvukaj

Teaching assistant at Faculty of Architecture and Spatial Planning, UBT College in Prishtina

blend.dema@ubt-uni.net  
zana.prelvukaj@ubt-uni.net

**Abstract.** The rapid urbanization and limited horizontal space in contemporary cities have led architects and urban planners to seek innovative solutions to accommodate the growing need for public spaces. This abstract delves into the intriguing concept of vertical public spaces and their potential to revolutionize urban landscapes.

Our research investigates how the concept of verticality can be effectively utilized to spread public spaces in the vertical direction.

Vertical public spaces offer a promising solution to the scarcity of open areas in densely populated urban environments. By envisioning parks, plazas, and recreational areas vertically, architects can make efficient use of limited land resources while fostering a sense of community engagement and interaction. This alternative approach to spatial planning has the potential to enhance the livability, functionality, and sustainability of cities.

Through a multidisciplinary exploration, our study examines various aspects related to vertical public spaces. We analyze architectural designs, structural considerations, technological advancements, and social dynamics that play a pivotal role in creating vibrant vertical public spaces. Furthermore, we delve into the experiences and perceptions of users, considering their spatial requirements and preferences, to ensure that vertical public spaces effectively meet the needs of diverse communities.

**Keywords:** vertical, public space, urban planning, urbanization

# Global organizations in the domain of Sustainable Architecture, emphasizing their support towards the building facade

Kaltrina Spahiu

<sup>1</sup> PhD. Can. Kaltrina SPAHIU, Faculty of Civil Engineering,  
University "Ss. Cyril and Methodius", Skopje, Republic of North Macedonia

kaltrinaa.spahiu@gmail.com

**Abstract.** In today's world, Sustainable Architecture is the focal point of research and the objective of numerous global organizations striving to achieve the principles of Energy Efficiency, as a correlation to creating buildings in the service of citizens. The principles upheld by these organizations serve as the foundation for many construction industries, engineers, and architects in the design, construction, and supply of building materials. Meanwhile, the building envelope in this context is a position that receives much attention, with positive promises at the end of Sustainable Architecture objectives.

This work is accomplished through research methods such as analytics, synthesis, and generalization. In conclusion, based on the parameters and benefits offered by Sustainable Architecture, which are borrowed by global organizations, it influences the creation of buildings that harmonize and align with nature and human needs.

**Keywords:** Facades, Sustainable Architecture, Energy Efficiency, Building.

# The effect of soil type results on amplification analysis for area “Dheu i Bardhë” on seismic aspect

Shemsi Mustafa<sup>1</sup>, Besian Sinani<sup>2</sup>, Visar Kelani<sup>3</sup>

<sup>1,2,3</sup> UBT - Higher Education Institution "Lagja Kalabria", p.n. 10000 Prishtine  
Seismological Network - GSK

**Abstract.** Seismic microzonation is the generic name for subdividing a region into individual areas having different potentials for hazardous earthquake effects, defining their specific seismic behavior for engineering design and land-use planning

The effects of earthquakes are not only dependent upon the magnitude of the earthquake and the distance from the source, but also due to local geological conditions. Subsurface conditions play a major role in the damage potential of earthquakes and the seismic soil amplification of a site which is a critical factor affecting the level of ground shaking. The effect of local soil conditions is taken into consideration in the evaluation of ground motion properties in seismic design of structures. One of the most important effects on the ground surface due to strong ground motion is soil amplification resulted in the structural damage. Soil amplification can be determined both by dynamic analyses performed according to analytical methods based on local site conditions and obtained with investigations based on the results of in situ testing methods. The purpose of this study is to develop predominant period and amplification factor for “Dheu i bardhë area.

**Keywords:** Soil amplification factors, dynamic soil properties, refraction analysis, predominantPeriod



# Efficient Planning on resources

Skender Kosumi

UBT Prishtine TU Wien

**Abstract.** The organisation of space is characterised by functional separation; meaning that each functionally distinct individual space is reduced in terms of intensity of use. Workplaces are empty when people are not working, apartments are empty when people are at their workplaces, restaurants that are open for breakfast/lunch, then others that are open lunch/dinner or dinner only...

The inevitable decline in intensity of use also affects infrastructure, access areas and public spaces, which often require complex construction and maintenance, but are not adequately used. Overall, this model represents a huge waste of space, energy and human resources. It is far from sustainable and will need to be radically revised given the growing pressure for resource efficiency.

**Keywords:** buildings, resources, flexibility, function, space

# Passive Design Strategies for Resilient and Regenerative Buildings

Ferhat Bejtullahu

UBT - Higher Education Institution Lagjja Kalabria, 10000 Prishtine, Kosovo

ferhat.bejtullahu@ubt-uni.net

**Abstract.** As the world faces increasing environmental pressures and the effects of climate change, the need for resilient and regenerative buildings has become more pressing. Passive design strategies, which rely on natural processes and materials to achieve thermal comfort and reduce energy consumption, have been recognized as a promising approach to creating sustainable and resilient buildings. This research paper aims to investigate how passive design strategies, specifically natural ventilation, daylighting, and passive solar heating, can contribute to the resilience and regenerative capacity of buildings. Through a literature review and case study analysis, this paper will explore the benefits and limitations of passive design strategies for resilience and regeneration, as well as the key design principles and considerations that architects and building designers should take into account when incorporating these strategies into their projects. Overall, this research aims to provide a comprehensive overview of the role of passive design strategies in promoting resilience and regeneration in the built environment and to offer insights and recommendations for architects, designers, and policymakers seeking to create more sustainable and resilient buildings and communities.

**Keywords:** Passive design strategies, Resilience, Regeneration, Building

# Landscape planning, environment and green spaces: Reorganization of space in Germia Park Prishtina (Kosovo)

Nexhat Balaj

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

nexhat.balaj@ubt-uni.ne

**Abstract.** Green spaces provide a wide variety of services to the urban ecosystem, including air quality improvement, climate regulation, and other elements that enhance the quality of the urban environment. The purpose of the work is a design and initiative for planting 1 million flowers for each year in an area of the park, it is an initiative that achieves state records. Location of this study was in Prishtina city in Republic of Kosovo. The study was conducted in Germia park in Prishtina, between April 2021 and August 2022. Germia Park represents a natural asset with resource and aesthetic value, which is of scientific and touristic-recreational importance, very important not only for Prishtina, but also for all of Kosovo. In 2016, the Municipal Assembly of Prishtina takes a decision to declare Germia a Protected Landscape, with an area of 1949 ha. In this study are presented some urban solutions and proposals for a reorganization of the Germia park, with plants, playground for children, walking paths, lighting, sitting areas, water areas. For landscape design, the following design programs have been used: Lumion 3D rendering software, Landscape design, ArchiCAD software. All forms of vegetation contribute to visual improvement and in this context, they are of aesthetic value and contribute to urban architecture.

**Keywords:** Landscape planning, green space, public space, Reorganization, Germia park

# From Sustainable to Regenerative Design

Besa Jagxhiu

UBT – Higher Education Institution, Kalabria nn., Prishtina, Kosova

besa.jagxhiu@ubt-uni.net

**Abstract.** Sustainable design is about minimizing negative impacts on the environment, the health and well-being of building occupants, and maximizing functionality without wasting resources, thereby improving building performance. The basic objectives of sustainability are reducing energy use and carbon emissions of buildings. However, the effects of ongoing climate change have highlighted the fact that simply reducing energy use is no longer sufficient. Therefore, as opposed to sustainably designed buildings, which are based on the concept of only using the minimum resources, regenerative buildings are designed and operated to reverse damage and have a net-positive impact on the environment. This paper discusses the principles of the built environment design, aimed at achieving a regenerative design. Therefore, the concept of sustainable design should be replaced with the new concept of regenerative design, where the buildings should interact with the environment and its inhabitants.

**Keywords:** Sustainable, regenerative design, environment, buildings

# The Brain Behind Design: Utilizing Neuroscience for Architectural Decision-Making

Dea Luma

University for Business and Technology, Prishtinë, Kosovo

dea.luma@ubt-uni.net

**Abstract.** The historical evolution of decision-making processes in architecture has been multifaceted, often prioritizing factors other than occupants' well-being. Acknowledging the unique needs and preferences of individuals, the study aims to unravel how architectural spaces elicit distinct emotional responses, and its impact on occupants' brain. This research endeavors to explore the possibilities offered by neuroscience tools for architects, deepening the understanding of the intricate relationship between occupants and their built environment. It seeks to investigate the historical applications of wearable neuroscientific devices in architectural practice, identify efficient methodologies for analyzing critical architectural parameters, and assess the potential and limitations of architects' independent use of neuroscientific tools. Through these inquiries, the study aspires to offer comprehensive insights into the practicality and efficacy of uniting neuroscience and architecture, ultimately enhancing the decision-making design processes in architecture.

**Keywords:** Neuroarchitecture, Decision-making, Evidence-based Design

# Application of renovation measures according to the Passive House standard in multi-residential buildings in Kosovo – Case study multi-residential in Peja

MSc. Zexhina Shehu Vokshi, Dr.Sc. Petrit Ahmeti

University for Business and Technology, Kalabria Neighborhood, 10000 Prishtinë,  
Republic of Kosovo

[zexhina.shehu@gmail.com](mailto:zexhina.shehu@gmail.com)  
[petrit.ahmeti@ubt-uni.net](mailto:petrit.ahmeti@ubt-uni.net)

**Abstract.** The energy efficiency of a building is generally related to how productive resources such as energy and water are used to provide services such as heating, cooling, and lighting, as well as to use the equipment installed or already in use in the building. The purpose of this project is to analyze and research the main principles of the Passive House standard, referring to expert interventions in multi-residential buildings in several countries around the world. In the research, three case studies of existing multi-residential buildings were taken, in which interventions were then made by experts in this field. After researching the case studies of the Passive House standard, another research was done in Kosovo, which was not based on this standard but was approximated in the advanced scenario. The main questions posed for this research are:

- How will the basic principles of the Passive House standard be applied to the research facility?
- What are the right materials that help us achieve the necessary coefficients to meet the criteria of the Passive House standard?
- How much would the saving in energy losses be before and after the application of renovation measures according to the Passive House standard?

Through various research and analyses the construction period of the building, the study of materials, and the calculation of thermal losses will be done, thus reaching the proposal of renovation measures according to the passive house standard in the multi-residential building in Peja. This research is based on the proposal of a better alternative solution, which will affect the reduction and improvement of energy consumption and the minimization of negative impacts on the environment.

**Keywords:** Efficiency, Energy saving, Passive house, Heat loss, Materials

# Application of Energy Efficiency Measures in Military Buildings

Dr.Sc. Petrit Ahmeti

University for Business and Technology, Kalabria Neighborhood, 10000 Prishtinë,  
Republic of Kosovo

petrit.ahmeti@ubt-uni.net

**Abstract.** Energy efficiency in military buildings is of paramount importance for both economic and strategic reasons. This paper explores the application of energy efficiency measures in military facilities, aiming to enhance operational capabilities while reducing environmental impact and energy-related costs. We review various strategies and technologies employed to improve energy efficiency in military installations, encompassing building envelope enhancements, advanced HVAC systems. We delve into the significance of energy security in military operations and the critical role energy-efficient infrastructure plays in achieving mission success. Subsequently, we present a comprehensive analysis of energy-saving strategies tailored to military buildings, including insulation upgrades, energy-efficient lighting, and optimized HVAC systems. In conclusion, the application of energy efficiency measures in military buildings is not only essential for cost savings but also for strengthening national security and mitigating the environmental impact of military operations. This paper serves as a valuable resource for military planners, engineers, and policymakers, offering insights into best practices and innovative technologies to achieve energy efficiency goals in military facilities. Ultimately, the successful implementation of these measures can lead to more resilient and sustainable military infrastructure, contributing to a more secure and environmentally conscious future.

**Keywords:** Military building, energy efficiency, building envelope.

# **Balancing Energy, Economy, and Environment: Obiliqi's complex urban challenges toward sustainable urban regeneration**

Cand. Dr. Rineta Jashari, MSc. Gearda Demiraj

College UBT- rineta.jashari@ubt-uni.net  
Sustainable Policy Consultant- geardademiraj@gmail.com

**Abstract.** The incorporation of sustainability principles into urban planning has been emphasized recently (in recent years), with a growing focus on energy, economic, social, and environmental considerations. These factors are increasingly shaping the strategies and policies related to urban revitalization. Specifically, the quest for innovative approaches to regenerate cities (areas) in a sustainable manner has given rise to the concept of sustainable urban regeneration.

This study seeks to address this crucial gap by evaluating the level of sustainability in urban regeneration interventions within the context of Obiliqi in Kosovo, which faces its unique challenges, including land contamination.

The paper's findings offer valuable insights for institutions involved in urban regeneration projects in Obiliqi, aiding the complexity of sustainable urban renewal while addressing the specific issues affecting not only this municipality but also neighboring areas and the wider region.

**Keywords:** urban planning, urban revitalization, sustainable urban regeneration, Obiliq, Kosovo,



# Harmony in Motion: Kinetic Architecture as a Catalyst for Climate-Responsive Design

Shkurte Dalipi, Sanelina Sadiki

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

shkurte.dalipi@ubt-uni.net  
sanelina.sadiki@ubt-uni.net

**Abstract.** The concept of "income spaces" in the context of architecture refers to the physical and spatial considerations that affect both humans and animals in their living environments. This abstract explores the intersecting realms of architecture, human habitation, and the coexistence of animals within urban and rural landscapes. It delves into the design and utilization of spaces to accommodate the needs and behaviors of both these groups, acknowledging their varying income sources, which in the case of animals can be ecological and environmental.

In modern urban planning and architectural design, there is a growing awareness of the importance of creating spaces that cater not only to human comfort and functionality but also to the diverse ecosystems that inhabit urban areas. This includes recognizing the ecological "income" that various species of animals bring to these environments through processes like pollination, pest control, and soil health maintenance.

The abstract also explores the challenges and opportunities presented by income spaces for people and animals. For humans, income spaces could involve considerations such as income distribution and affordability in housing, as well as access to public spaces and services. For animals, income spaces may encompass the availability of suitable habitats, the preservation of migratory corridors, and the integration of green infrastructure into urban landscapes.

**Keywords:** Income spaces, Human and Animal habitats, Architecture, Built environment, Design principles, Sustainability, Accessibility, Infrastructure, Organic design, Resource optimization, Urbanization Habitat loss, Climate change, Resilient design, Coexistence, Mutual prosperity, Ecological responsibility.

# **Digital Techniques for the Accessibility and Promotion of Historical Buildings: A Case Study of the Former- Yugoslavian Embassy in Tirana**

Dorina Papa PhD

University of New York, Tirana

**Abstract** The urban character of a city lies in the layers of different historical buildings. Understanding, safeguarding, and showcasing this history demand a deep understanding of the city's architectural heritage. Today, rapid advancements in digital technologies, including 3D modeling, virtual reality (VR), augmented reality (AR), and online accessibility, facilitate the identification and promotion of cultural heritage. These technologies bring into life historical objects or artifacts in places inaccessible to the public or objects that have been lost and no longer exist. This not only disseminates and promotes historical heritage but also plays a crucial role in preserving collective memory. In addition to conventional methods of preserving and presenting historical buildings, emerging technologies can significantly contribute to this endeavor. Digitally documenting monuments aids in their preservation, presentation, and widespread recognition within the architectural heritage domain. Given the intense transformation experienced by our cities, wherein the loss of significant architectural structures cannot be discounted, digital techniques assume great importance. This research focuses on the iconic villa located on Durrës street in Tirana, built during the Italian period, in a neoclassical style and known as the "Former Yugoslav Embassy". It stands as one of the few remaining buildings from that era, albeit having undergone various transformations. The research project seeks to explore innovative digital methods to digitally delve into this architectural heritage. By employing these methods, the general public can access historical information, use archival materials, and virtually explore the villa. This interactive experience is enabled through a 3-dimensional web application, allowing users to interact with the space from different points of view and view the object in both its current state and historical version. The study comprehensively outlines the entire process of conceptualizing and developing this web application.

**Keywords:** Virtual heritage, 3D modelling; historical phase; interactive exploration; Web application;

# **New challenges for our cities' public spaces creation in the time of climate change and new mobility trends**

Vladimíra Šilhánková, Michael Pondělíček

Masaryk Institute of Advanced Studies, Czech Technical University in Prague Kolejní 2637/2a, 160 00  
Praha 6, Czech Republic

vladimira.silhankova@cvut.cz  
michael.pondelicek@cvut.cz

**Abstract.** Public spaces are the true essence of what makes a city, according to their condition and the quality that we evaluate. With the change in lifestyle, the forms of public space also change. The twentieth century brought traffic to public spaces, which dominated the entire public space with traffic congestion, and which turned public spaces into parking lots. In the countries of Western Europe, since the second half of the 20th century, it has been solved by the renewal of public spaces of cities so that they again become "living rooms" of cities, and a solution is being sought to displace transport from public spaces and how to make them habitable again. At present, this is being compounded by other new challenges, namely the impacts of climate change and new possibilities for electromobility and micro mobility. The paper will focus on the analysis of the requirements and possibilities of solving the state of public spaces so that they meet the requirements of habitability, mitigate the impacts of climate change (especially act against the formation of thermal urban islands) and create a sufficiently high-quality environment for the application of contemporary tenders in transport.

**Keywords:** public spaces, climate change, quality of life, mobility

# **An extensive background of urban unsustainability and searching for alternatives: Compact City, Resilient City and Smart City as alternative concepts and approaches towards urban sustainability**

Shqiprim Ahmeti

UBT- Higher Education Institution, Institute for Urban Studies and Spatial Planning, Pristina

shqiprim.ahmeti@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 imbalances particularly those between urban and rural areas, traffic congestions, as well as threat towards unrenovable sources are among biggest concerns arising 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 three concepts and approaches: Sustainable City, Resilient City and Smart City. These concepts and approaches will be detailedly 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:** Alternatives to Unsustainability; Sustainable Cities, Resilient Cities, Smart Cities

# Islamic cult monuments in Mitrovica and its Surroundings

Prof. Ass. Dr. Pajazit Hajzeri

Faculty of Architecture and Spatial Planning, UBT College –  
Higher Education Institution, Prishtina, Kosovo

pajazit.hajzeri@ubt-uni.net

**Abstract.** The conquest of the Albanian territories by the Ottoman Empire, among other things, brought a new faith (religion), Islam. With the establishment of the Ottoman administration in the cities, the construction of Islamic cult monuments, mainly mosques, tombs and mosques, began. Even the city of Mitrovica did not lag behind in terms of the construction of mosques as the main objects of Islamic worship. The importance of the city of Trepça at that time was also as one of the most developed mining and metallurgical cities, it was chosen to build the first mosque in this region. While the city of Mitrovica was a newer settlement, the construction of mosques began somewhat later than in Trepça. While in the villages, knowing the broken terrain and the difficulties of extending the Ottoman rule in those places, the construction of mosques is much later than in the urban centers.

A considerable number of mosques that were once present in Mitrovica and its surroundings are no longer present. What remains of them are only the memories or some photographs of that time that document their existence.

On the basis of urban or rural settlements, the architecture of the construction of mosques and other objects of Islamic worship also differed.

**Keywords:** Cult, Islam, mosque, urban center, village, city.

# The Importance of Choosing the Right Materials, in Architectural Projects

Muhamet Ahmeti, Blerta Retkoceri

UBT- Faculty of Civil Engineering, Str.Kalabria p.n, Prishtina, Kosova

muhamet.ahmeti@ubt-uni.net  
blerte.retkoceri@ubt-uni.net

**Abstract:** The selection of materials in design holds significance as it deeply impacts the beauty, functionality and sustainability of constructed spaces. This abstract explores the crucial role material selection plays in projects shedding light on its faceted effects on both the built environment and its occupants. Materials serve as the foundation for architecture providing architects and designers with a medium to bring their visions to life. The process of selecting materials involves consideration of factors such as structural strength, thermal performance, environmental sustainability, cultural context and aesthetic appeal. Each material possesses properties that can either enhance or impede the success of a project. Architects face the challenge of striking a balance between meeting requirements and achieving aesthetic goals when choosing materials. The choice of materials significantly impacts a buildings stability and longevity. The strength, durability and maintenance needs of materials must align with the intended purpose of the structure. Be it a towering skyscraper, a residential home or an iconic cultural landmark. Furthermore, material selection plays a role in promoting sustainability and environmental consciousness. As our world grapples with climate change consequences architects are increasingly responsible, for minimizing their projects carbon footprint. Using materials, like recycled, reclaimed or renewable resources presents possibilities for cutting down on energy usage minimizing waste and addressing environmental concerns. It is vital to integrate these materials into designs in order to pave the way, for a greener and sustainable future.

Furthermore, it is important to consider the cultural and historical background of the resources. Materials have the ability to communicate a place's history, legacy, and identity. Traditional building methods and the use of regional resources can help preserve a sense of continuity with the past while meeting modern needs.

In conclusion, choosing materials for architectural projects is much more than a technical decision; it is an artistic and moral undertaking that determines the nature and standard of the constructed environment. In order to develop structures that are not only practical and visually beautiful but also sustainable and culturally relevant, architects and designers must navigate a complicated landscape of factors. The foundation for inventive, durable, and responsible building is the careful and considered use of materials.

**Keywords:** Material selection, Design, Beauty, Functionality, Sustainability, Constructed spaces etd

# The Evolution of Students Dormitories; Adapting to Changing Needs and Expectations

Mimoza Sylejmani

UBT- Faculty of Architecture, Str.Kalabria p.n, Prishtina, Kosova

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

**Abstract:** This paper explores the design changing of student dormitories and how their design and functionality have evolved over time. This paper provides an overview of the transformations that student dormitories have undergone to cater to the needs and expectations of students across generations. The paper examines the social factors that have influenced the design and functionality of student dormitories, including aspects such as gender mainstreaming, diversity and inclusion. Furthermore, this paper investigates how technological advancements have reshaped student dormitories. Sustainability in architecture, innovative solutions have greatly improved the quality of life, in students dormitories. The concept also looks into the economic and environmental sustainability of dormitories for students, highlighting how crucial it is for contemporary designs to use space effectively, conserve energy, and use sustainable building techniques.

In conclusion, this paper offers important information about the complex past and ongoing relevance of student housing options. A fuller understanding of the interface between architectural design and living satisfaction of students is provided by evaluating the functional evolution of students dormitories through different periods of time.

**Keywords:** Students, dormitories, design evolution, functionality, evaluation

# Extensive customer satisfaction survey of implemented energy efficiency measures in schools and public buildings in Kosovo

Kreshnik Muhaxheri<sup>1</sup>, Bleta Berisha<sup>2</sup>, Ramadan Alushaj<sup>3</sup>

<sup>1</sup>Professor, University for Business and Technology-UBT, Kosovo

<sup>2</sup>Architect, Energy Efficiency Expert

<sup>3</sup>Professor, Faculty of Mechanical Engineering, PUT, Albania

**Abstract:** As a continuation of the previous studies related to the identification and measuring of the level of end users satisfaction, the perception of indoor air and thermal comfort, the awareness on the EE measures, and the additional benefits of EE upgrades (eg. reductions of sick leave days, increasing productivity, increasing budget for other priorities, etc.), the authors has collected and analysed 25 new selected schools and public buildings from the group of 88 buildings and 483 respondents.

Comparing with the previous study, this investigation contains five time more analysed public buildings, including schools as specific topic, and 3 time more respondents.

This paper contains final results of Customer Satisfaction Survey (CSS) of the both part of studies, phase “before” and “after” implementation of EE measures in 88 schools and public buildings in Kosovo realized during winters 2021/2022 and 2022/2023 and comparison with the results from initial study for 5 public buildings.

During the investigations authors has used almost the same qualitative and quantitative methodology in buildings survey after implementation of the retrofitting works to systematically measure the social impact of project activities as baseline for comparing with the phase before implementation of the Energy Efficiency measures,

The indicators of achievement, following a careful assessment of their feasibility, together with a proposal for their review/amendment based on findings of the actual conditions assessed on the field during both phases of the study and final results were compared with the results from the initial study.

**Keywords:** Customer satisfaction survey, EE measures, schools and public buildings, NPI



# Form is Function: New Comprehension through Parametric Architecture

Visar Shllaku

UBT University for Business and Technology Architecture and Spatial Planning, Lagja Kalabria pn,  
10000 Prishtine, Republika e Kosoves

visar.shllaku@ubt-uni.net

**Abstract.** While form and function are distinct elements in the design, they share an inseparable correlation. The form, in conjunction with the architectural space, embodies its intended function; the form itself is the function and structure of the architecture. In parametric design, the relation between form and function becomes closer. Functional requirements often direct the form with parameterization according to the needs and conditions presented or given as parameters. This paper explores the concept of "Form is Function" in the context of parametric architecture, examining how parametric design challenges conventional notions and offers new comprehension of the relation between form and function. The paper analyzes case studies and theoretical frameworks to illustrate the innovative possibilities that parametric architecture introduces for form-function integration and its implications for contemporary architectural design.

**Keywords:** Form, function, parametric architecture, relation, architectural design

# Housing quality, an analytical approach of Typology and construction between the city of Ohri and Berat

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

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

<sup>2</sup>UT, Tetova, Republic of North Macedonia

kujtim.elezi@ubt-uni.net  
nuran.saliu@unite.edu.mk

**Abstract.** The city of Ohri and Berati have a long urban history rooted deep down in ancient times. Different factors indicated the formation and the development of the cities itself during their existence. Both cities, Ohri, and Berati are known as cities of fortification and churches, but as the time goes by, in their architectural layers have 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 and Ohri, as a marvelous example of the Ottoman era vernacular house in the Balkans. The aim of this paper is to firstly present the factors that influenced the creation of residential architecture in these two cities, to then have a data base to make a qualitative comparison of the housing built in these two cities. Through the comparison, it is attempted to present the quality of the houses, both in typology and construction, as well.

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

# Modern architecture in the city of Tetova, 1945-1990

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

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

<sup>2</sup>UT, Tetova, Republic of North Macedonia

kujtim.elezi@ubt-uni.net

nuran.saliu@unite.edu.mk

**Abstract.** The aim of this paper is to present the Modern architecture in the city of Tetova, for the period time between 1945-1990. The first part of the paper aims to clarify the end of the NEO architecture that was rapidly produced in the town some time before and after the World War II. Here, one can follow the strength and the power of the style presented in buildings, but also the smooth way of ending the NEO architecture and the very begin of Modern understanding of making new architecture. The new begin in the city architecture was also followed by the new political system, that was badly looking to find himself presented, among other fields, also in architecture.

The second part of the paper investigates the problems that cost the modern way of thinking and building in Tetova. Not always, especially not in towns in Macedonia and Balkans, the Modern movement in architecture followed the rules of the book, meaning starting from the scratch. Politically influenced, most of the time Modern architecture began after the old architecture was destroyed in large scales. Cities lost their identity, in order to make place free for the new movement- the modern architecture. Only decades later, historians would conclude that this step at that particular time was completely wrong.

The third part of the examination on the field brings clear light on achievements during the modern era of making architecture in Tetova. Here we are able to see the power of modernism in the city itself, the new way of thinking and living in town, and the look of buildings that changed in a very short period time the shape of the city, more that the city life of its inhabitants.

**Keywords:** modernism, history of modern architecture, Tetova, Macedonia

# Local Community Perceptions Towards Revitalization of Old Swimming Pool in Saraj, North Macedonia

Fjolla Ibraimi, Erda Besimi, Hafije Murati

University of Tetova, North Macedonia

fjolla.ibraimi@unite.edu.mk

erda.besimi@unite.edu.mk

hafije.murati@unite.edu.mk

**Abstract.** The sports and recreation center “Saraj”, situated between the rivers Vardar and Treska, is an important recreation area for the citizens of Skopje and nearby residents, especially during the summer months and weekends. However, the situation today is not the same as it was decades ago, when the park was packed with visitors as a result of numerous sporting, leisure and entertainment opportunities it offered. The center was well known for its Olympic swimming pool, football and basketball fields and other recreational facilities. Neither the pool nor the courts have been in use for years, but they remain a monument of the past time, an urban heritage now forgotten and left to decay. Revitalization of the old swimming pool, would offer a variety of advantages, such as economic, social, health and cultural. Considering that the potential of the complex is huge, and can include a variety of contents, decision-making processes would benefit from a better understanding of how people perceive this site and how they interact with it. Public opinion is often one of the main factors to encourage proper decisions for management and planning of urban spaces. For this reason, this paper will mainly focus on the community’s perception regarding the values of the complex and its potential for future use.

**Keywords:** community, perceptions, values, swimming pool, revitalization

# "The design of residential buildings, over the years, in Pristina - Flexibility in architecture"

Ermira Muçiqi, Mimoza Sylejmani

UBT- College of Business and Technology, Lagja Kalabira, 10000 Prishtina, Kosovo

**Abstract.** Housing, a social right of every citizen, affects the course of society's development and is an important component of social-economic development, namely of the standard of living. The goal is to analyze projects over the years, specifically the project of these buildings, to recognize the equivalent relationship between the architecture and the users of these spaces, specifically to analyze and see the possibility of realizing spatial flexibility in a condominium building. Prishtina, as the capital, always offers great existential opportunities as a city with considerable collective residence. Therefore, we can say that the analyzed projects are treated in two aspects: analyzing the design of condominium residential buildings, before 1999 and after 1999, analyzing two examples for each period, specifically analyzing the design of residential units of characteristic floors, and in terms of identifying the demands and needs of residents over the years for the spaces within these housing units.

**Keywords:** Flexibility, Architecture, Planimetry, Co-owned residential buildings

# Preliminary results on survey about noise pollution sources in Kosovo

Egzon Bajraktari\*, Katarina Palushaj, Lyra Bakija, Egzona Morina, Besart Ymeri

UBT, Rexhep Krasniqi str., 10000 Prishtinë, Kosovo

egzon.bajraktari@ubt-uni.net

**Abstract.** Urban landscape in Kosovo has changed rapidly in the last two decades. Many urban development and infrastructure projects were carried out. Density of the urban fabric has increased and urban sprawl has stretched out city boundaries. On the other hand and at the same time people's lifestyle has changed and their living standard has increased as well, which can be seen, for example, in the increased number of cars in traffic. All of these developments lead to a noisy environment in Kosovo. Noise pollution is spread out as a phenomenon in Kosovo urban environments though not so much addressed or talked about. There are not enough data about noise levels or noise sources impacting Kosovo citizens. UBT College has undertaken a socio-acoustics survey inquiring about noise pollution sources in Kosovo and people's attitude towards noise pollution. A total of 196 subjects participated in the survey. The results of this survey identifying main noise sources are presented and discussed.

**Keywords:** Noise pollution, noise sources, Kosovo, 2000-2020.

# Design and Planning Factors that influence the building's' users health – including physical health, mental health and well-being

Blerta Vula Rizvanolli<sup>1</sup>, Paola Viloría Sáez<sup>2</sup>, Mercedes del Río Merino<sup>3</sup>

<sup>2</sup>Blerta Vula Rizvanolli, UBT College, Calabria, n.n., 10000 Pristina, Kosovo  
blerta.vula@ubt-uni.net

<sup>2</sup>Paola Viloría Sáez, Polytechnic University of Madrid, 28040 Madrid, Spain

<sup>3</sup>Mercedes del Río Merino, Polytechnic University of Madrid, 28040 Madrid, Spain  
<sup>2,3</sup> {mercedes.delrio,paola.villoria}@upm.es

**Abstract:** Architectural and spatial design of the buildings, neighborhoods and cities has an immense impact on how their inhabitant live, feel and interact. The building design process is very complex combining feedbacks and decision-making from functional, technical, sociocultural, environmental, aesthetical and financial perspective performed with a sustainable approach in mind. Thuy (2018) has classified the design factors in three main categories – I. Earth/Location, II. Heaven/Sunlight and III. Human/Behavior, while Attaianesi & Duca (2012) have considered factors such as physic ability, sensory ability and behavioral characteristics as crucial in users' physical and mental conditions. As long as other authors intent to analyze the “Why” and “What” of buildings design factors, Alwisy et al. (2018) aim to rank “How” these factors influence the users' experience in buildings. Architectural design process consists of several stages, initiated by information gathering and finalized with built product. This paper aims to analyze the process while considering, evaluating and ranking the factors from the most influential ones that affect the inhabitants physical and mental health. A cross reference with the green building rating systems has been utilized. A scientific analytical-interpretative methodology based on qualitative research is being used to appraise the factors, based on which a figure of their list is being proposed. Finally, research limitation is being recognized and recommendation for future research is being advised.

**Keywords:** building design, well-being, design factors, health

# **Transformative Cities, challenges towards resilient and green city (Case study: Prishtina)**

Binak Beqaj

UBT- College of Business and Technology, Lagja Kalabira, 10000 Prishtina, Kosovo

bbeqaj@ubt-uni.net

**Abstract.** Transformative cities and the rapid development dynamics of countries in transition are interconnected components in terms of challenges! The concepts of rapid development of cities are related to the research question:

What if modern city development is challenged by: dynamism, flexibility and ecology?

While the concept of the flexible and dynamic city relates to physical, economic and social elements; the other concept of the ecological city relates to resources, diversity and reconstruction.

The key issue of planning transformative cities remains the integration of these two main concepts within the development process through institutional, regulatory and financial approaches!

**Keywords:** city, components, diversity, transformation, integration.



# The Development of the Mosques Architecture in Kosovo

Bekim Çeko, Lulzim Beqiri

University for Business and Technology - UBT, Prishtinë, Republic of Kosovo

bekim.ceko@ubt-uni.net

lulzim.beqiri@ubt-uni.net

**Abstract.** Kosovo, a land rich in cultural diversity and historical significance, has witnessed a fascinating journey in the evolution of mosque architecture. Over centuries, this region has been a melting pot of various cultural influences, resulting in a unique and diverse architectural heritage. This research sheds light on the remarkable development of mosque architecture in Kosovo, showcasing the transformation of these sacred spaces that not only serve as places of worship but also as symbols of cultural identity. The study delves into the early roots of mosque architecture in Kosovo, dating back to the Ottoman period, where the Ottoman Empire's architectural influence left an indelible mark on the landscape. It traces the inception of traditional Ottoman Mosque design in Kosovo, characterized by distinctive features such as domed roofs, minarets, and intricate decorative elements. Furthermore, this research highlights the role of mosque architecture as a reflection of Kosovo's cultural and religious diversity. In conclusion, the development of mosque architecture in Kosovo is a testament to the region's rich history and its ability to adapt and evolve while preserving its spiritual essence. This abstract provides a glimpse into the captivating journey of how mosque architecture in Kosovo has evolved over time, reflecting both continuity and change in the face of cultural and societal transformations.

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

# Construction Principles, Materials and Methods in Polyfunctional Interior Spaces

Bard Bajcinovci

UBT- Faculty of Architecture, Str. Kalabria p.n, Prishtina, Kosova

bard.bajcinovci@ubt-uni.net

**Abstract:** Principles are a way of interluding a pathway in key momentums for designing and building an absolute masterpiece, in this paper are intended the main component's that give life to an interior space. The main principles that an engineer and architect should take under analysis before designing an interior space are: cost, methods, materials, durability, conform, and aesthetics. What does a key part play in role before designing: knowing materials? or knowing the methods that could implement in a space? In this case the furthermore comprehension should evolve before building, construction plays not only as a keypath but alsotakes the risk of fine establishment. Some of the main components or basic construction conceptual parts to an interior are: the flooring, ceiling, walls, structure, lighting, and color. These points are intended to give a spirit of an interior, hence materials and methods are interlinked, so the selection and the implementations should be aware. Construction is undeniable asset for an investor, sow as an architect, the connection between these 2 professions must be in harmony, ergo comes to plays the foundation of cost. Expectations before executing the main construction pieces like: slab, beam, column etc. The structure should harmonize withing the function of an building, sow in cases of hi-end & multifunctional spaces should be at freedom with creativity and comfort for mankind. It depends & relays in any type of space that are intendent to be in usage, hence a polyfunctional space horizons' us to evolve that type of thinking! The main goal of this research is to bring together and coordinate some basic principles before designing an interior, threw actual modern martials and apply methods.

For every problem there is multiple solutions!

**Keywords:** Interior spaces, Construction, Principles, Materials, Methods, Architecture.

# **The historical and urbanistic study of Shadervan Prizren(old city center): An analyze of development of urbane space of last century – Urbanistic Plan Of 1965**

Shaindre Krasniqi Guri, Veron Tara

UBT - Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtina, Kosovo

shaindere.krasniqi@ubt-uni.net  
verontara@gmail.com

**Abstract.** This scientific assignment analyzes urban history and development of “Prizren Shadërvan zone” in the last century period. “Shadërvan” is an important and dominated element of the ancient Prizren’s city view. In this study assignment, it will be a detailed analyzes of this space including architectonic changes, urbanistic and architectonic transformation of this area. The assignment includes an historical description of “Shadërvan” zone and its cultural value. It was emphasized about “Shadërvan” role as a cultural and political event of city. In specific, it was analyzed its change through the last century period including the architectonic and urbanistic transformation of this area. Also, the assignment treats modern interjections in Shadërvan zone, including the urbanistic Plane of 1965, and the construction of the craft center in 1965. This interferences have indicated in Shadërvan’s view and function and were valued in the urban remembering contest of city. Through the analyses of the historical documents and different sources, this study offers a good understanding of the “Shadërvan” evolution and the different indicated factors in its development. This assignment assures a contribution in knowing of the urban history and culture of Prizren and it helps to memorize and this valuable cultural map.

**Keywords:** Prizren, Shadervan, Transformation, Urbanistic Plan, Craft Center, Memories.

# **The reasons for the non-implementation of the current legislation for the legalization of construction without permission, in the Republic of Kosovo**

Dr. Sc. Venera Goxha

UBT- College of Business and Technology, Lagja Kalabira, 10000 Prishtina, Kosovo

venera.goxha@ubt-uni.net

**Abstract.** According to data from the relevant institutions of Kosovo, there are about 352,000 objects/buildings built without a construction permit, which are considered illegal constructions and which must therefore be subject to the legalization process. Within the identified constructions are residential units, warehouses, garages, business facilities. Despite the fact that the Republic of Kosovo has adequate and relevant legislation in force, regarding construction and legalization issues, the process of legalizing constructions without permission, implementation and enforcement do not have the required and desired fluidity. Stopping, stagnation, freezing of the process, are some actions identified around this process. Therefore, the orderly completion of this process, in accordance with the current flow, will take an extremely long time. What is the legislation in force, which lacks applicability on the ground, as a result of which it becomes the main reason for not reducing the number of constructions without permission, increasing the number, or even not solving this major issue, will be analyzed in this research.

**Keywords:** illegal constructions, legislation in force.

# Challenges and measures of defining road safety keyperformance indicators

Visar Baxhuku <sup>1</sup>, Alishukri Shkodra <sup>2</sup>, Jeton Rexhepi <sup>3</sup>,

<sup>1</sup> International College of Business and Technology - UBT,  
Lagja Kalabria, Prishtinë, Kosovëvisar.baxhuku@ubt-uni.net

<sup>2,3</sup> Kosovo Police, Road Traffic Division  
„Luan Haradinaj“, Prishtinë, Kosovë  
{alishukrishkodra,jetonrexhepi}@kosovopolice.com

**Abstract.** Road safety currently poses a particular challenge in terms of events and consequences in people. Initially, the number of events and consequences (number of accidents and fatal consequences from them) were used to determine the level of road safety, while over time the data of users, the location of the event and the vehicles involved have been expanded. Through road safety indicators 5 and 13 (European Commission Mobility and Transport Transport themes Clean transport, Urban transport SUMI) the level of road safety in urban areas is determined. All these data and this determination are presented for the events that occurred and analyzed. Road safety performance indicators measure the level of implementation of traffic measures and rules by road users (all forms of movement). For this purpose, in March of 2023, the Main Indicators of road safety performance (Baseline project) were published, where the main indicators are listed: (KPI 1) Speed of free circulation of passenger vehicles, (KPI 2) seat belt (and CRS)-percentage of correct use (drivers), (KPI 3a) Motorcycle helmets -percentage of use, (KPI 3b) Bicycle helmets -percentage of use, (KPI 4)Alcohol -Percentage below the BAC limit, (KPI 5) Distraction - percentage NOT using handheld devices, (KPI 6) Vehicle safety - assessment of newly registered passenger cars, (KPI 7) Road infrastructure - (some KPI definitions), (KPI 8) After-accident care - times of emergency response (95th percentile). For all these performance indicators, goals have been set which are claimed to be achieved within a certain period of time.

**Keywords:** Road safety, indicators, performance, purpose.

# Navigating Cultural Biases in Smart City Models: An Analysis of Environmental and Social Implications.

Alessandro Masoni

University of New York, Tirana  
Rruga e Kavajës, pranë 21 Dhjetorit (Sheshi Atatürk)

alessandromasoni@unyt.edu.al

**Abstract.** This paper examines Western cultural biases and their impact on how Smart City models address environmental and social issues by exploring the gap between the idealized Smart City concept and its real-world implementation. Despite enthusiasm and investment in smart cities, several unresolved shortcomings remain, and the study attempts to critically assess the interference of cultural biases in achieving the expected goals. Smart cities rely heavily on technology, but concerns such as increased resource consumption, exclusion of marginalized groups, gender bias and privacy underline the need for enhanced ethical considerations. In addition, economic interests often prioritize short-term gains over long-term sustainability. This research highlights the importance of questioning cultural assumptions, decolonizing smart city initiatives and understanding the complex influences that shape this model of urban development. While not exhaustive, this research encourages a deeper understanding of the underlying assumptions that may perpetuate an unsustainable and unjust urban model, rather than promoting true sustainability and social justice.

**Keywords:** Smart city; Cultural Bias; Power Imbalance; Sustainability; Responsibility; De-colonization.

# The Significance of Location in Shopping Center Design

Zana Prelvukaj

UBT- Faculty of Architecture, Str.Kalabria p.n, Prishtina, Kosova

zana.prelvukaj@ubt-uni.net

**Abstract.** The importance of location in the design of shopping centers and how it affects both their success and functionality are covered in this paper. A shopping center's feasibility and appeal as a destination for retail can be strongly impacted by the location choice, which is a crucial consideration. This essay offers a thorough analysis of how location factors have influenced the layout, usability, and general effectiveness of retail centers.

The paper starts off by highlighting the crucial role of location and how it affects foot traffic, the catchment region, and market demographics. It looks at the strategic placement of shopping malls in urban, suburban, and rural settings, as well as the importance of being close to main thoroughfares and transit hubs. The relationship between location and the choice of retail tenants is also explored in this abstract. It clarifies how the neighborhood's demographics and tenant preferences are influenced, as well as any possibility for collaboration between the shopping center's anchor businesses and smaller retailers. The topic also includes the developing idea of mixed-use complexes, where opportunities and demands specific to an area drive the integration of residential, commercial, and recreational spaces.

The paper demonstrates how a thoughtfully chosen location can promote a sense of community and improve both the quality of life for locals and tourists. This abstract also discusses sustainability issues, highlighting how location can help to lessen environmental impacts by reducing transportation emissions and using resource-efficient design techniques.

In conclusion, this paper emphasizes how important location is to the success and sustainability of major retail destinations. It is more than just a consideration in the construction of shopping centers. For architects, developers, merchants, and urban planners looking to construct lively and successful shopping centers that resonate with the needs and desires of the communities they serve, a thorough investigation of the interaction between site and design offers helpful insights.

**Keywords:** Shopping centers, Location importance, Design impact, Retail success, Feasibility, Catchment area etc

# The impact of the public open space connections in the Calabria district of Prishtina

Zejnulla Rexhepi, Safete Veliu Rexhepi

UBT – Higher Education Institution, Faculty of Architecture and Spatial Planning, Lagjja Kalabria pn;  
10000; Prishtina; Republic of Kosovo

{zejnulla.rexhepi, safete.veliu LNCS}@ubt-uni.net

**Abstract.** The construction of multi-residential buildings in the private sector has impacted the relationship between private public spaces and public open spaces. This study concentrates on the southeastern region of the Calabria regulatory plan and investigates the intended and actual quasi-public spaces based on building permits. The results will provide valuable knowledge for upcoming urban planning in the city and will be compared to other cities that have implemented regulations for public open spaces in the vicinity of multi-residential building

**Keywords:** Housing in Prishtina, Public Open Space, Urban Planning, quasi-public spaces.



# **Spatial Standards of Apartment in Pristina: A Comparison of Floor Areas with European Countries**

Safete Veliu Rexhepi, Zejnulla Rexhepi

UBT – Higher Education Institution, Faculty of Architecture and Spatial Planning, Lagjja Kalabria pn;  
10000; Pristina; Republic of Kosovo

{safete. veliu, zejnulla. rexhepi, LNCS}@ubt-uni.net

**Abstract.** The housing of the future foresees suitable housing standards, which are flexible and adaptable for future generations as well. Sustainable housing, among other things, means sufficient surface area per capita and it is an important element of the quality of life. The study is based on the research of apartment units in the framework of apartment housing, in terms of floor areas. The results are derived from the comparison of the spatial standards of four European countries, which according to recent research are among the highest in Europe: Denmark, Sweden, Austria, and France.

**Keywords:** Floor area, Housing in Pristina, Spatial standards.

# The Right of Housing in Kosovo, Challenges of transformation of the permanent user right

Ram Hamzaj<sup>1</sup>, Joy Zeynullah<sup>2</sup>

<sup>1</sup>Faculty of Architecture and Planning spaceman, University of Business and Technology, St. Rexhep Krasniqi pn., Pristina 10000, Kosovo

<sup>2</sup>University of Galway, Republic of Ireland

rame.hamzaj@ubt-uni.net

G.Zejnullahu2@universityofgalway.ie

**Abstract.** In Kosovo, after the period of 1999, transformations were carried out in the constitutional and legal aspect, but the right to transform housing right was not a priority. As a result of this, adequate policies have not been created to identify all housing issues, aimed at residential units or buildings built before 1999. There have also been no efforts to create new policies, which prioritize the issue of transformation from the possessor to the owner of housing, as an issue with a great social and economic impact. After 1999, the transformation of the right of housing, acquired during the former Socialist period, began. This is actually the main and necessary transformation that has happened in Kosovo. Although necessary as a process, from which the citizens, who enjoy the permanent user right, are the direct beneficiaries, it has not yet been completed. The so-called process of privatization, or the transformation of the right to housing, was a process whose main obstacle was the legal constructions of the discriminatory period, namely the oppressive measures, which had the objective of depriving the right to housing. This process, which has started for more than a decade ago, in addition to enabling privatization, has also served as a process through which the legal and factual problems, created during the discriminatory years, have been inventoried. This process has been able to identify and inventory the problems, inherited in relation to the right of residence, respectively related to residential buildings, which are not inventoried and registered. In this paper, we will clearly address and suggest how to create policies for property rights that will be an indicator to precede the economic and social development plans. In this paper, the problems inherited from the former Socialism and the methods for the transformation from possession, to property rights will be addressed, through the process of sale and privatization.

# Symbols and decorative elements in traditional residential building, called “Kulla”

Zekë Islamaj, Bekim Çeko

University for Business and Technology - UBT, Prishtinë, Republic of Kosova

zeke.islamaj@ubt-uni.net  
bekim.ceko@ubt-uni.net

**Abstract.** The architectural and aesthetic treatment of rural buildings for traditional residence "Towers", which at the beginning intertwines the composition of these two creations in terms of volume. The volumetric composition of traditional rural residential buildings "Towers" is found in both the external and internal architectural elements. The position of the functional elements in the building, the architectural effect and the way of handling them, both in the technical and decorative aspect, is undoubtedly the merit of the designer and master craftsman during the construction. The volumetric composition of the elements of traditional rural residential buildings "Towers", without going into detailed analysis, but based on their proportions, they are distinguished in terms of balance and naturalness. These two qualitative aspects are handled from the design level to the completion of construction, according to the time of construction and the fulfillment of requirements in the functional aspect. In the rural buildings for traditional residence "Towers", it is clearly observed that the first goal was to fulfill the requirements in the functional aspect, which in most cases, to a certain extent, also fulfilled the aesthetic values, the level of which, obviously, was closely related to the creative personality of the designer and the master builder, which influenced the buildings to differ from each other. The care and interest in the aesthetic treatment of the buildings as a whole is more pronounced in the care of the substantive elements of the building, to treat them in an aesthetic, functional and architectural aspect, such as: openings (doors and windows), windows, surfaces of wooden dividing elements (walls), surfaces of ceilings, shelves, cupboards, shelves, etc.

The level of aesthetic decoration of different elements, in the same building, is not the same for different floors and rooms of the building, but differs depending on the type of architectural element and its purpose. In the space of the ground floor (the manger), which is usually dedicated to livestock, the decorations are almost non-existent or at a low level, while in the rooms with different vital functions, which are dedicated to living, the level of decoration more and more aesthetic. In the rooms of the first floor (above the ground level), in the rooms for cooking, aesthetic decorations of a low level are found, which are added to the connecting rooms and those dedicated to sleeping, while the highest level of decorations is found on the third floor, to the divanhanja and especially to the men's room (oda e burrave), which can be said to represent an architectural representation of the cult of the friend, which is known as a typical Albanian feature.

**Keywords:** Traditional residential rural building "Kulla", building, architectural and aesthetic treatment, volumetric composition, aspect of balance and naturalness, level of aesthetic decoration, cattle space (manger), cooking space (kitchen), connecting space, divanhane, men's room (oda e burrave), opening (doors and windows), window's frames, surfaces of wooden dividing elements (walls), surfaces of ceilings, shelves, lockers, trapazan, etc.

# IC-ART AND DIGITAL MEDIA

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Editors:

Hajrizi E. (UBT)

## Moving monument - moving back

Alban Muja

Art and digital Media – UBT,10000 Prishtinë, Kosovë

**Abstract.** The public art piece that had the theme of 'Equality, work and education' and was located in the center of Mitrovica in the late 60s. For unknown reasons he was absent in 2010, reportedly left after the square was renovated, but never returned. This work for all of us who have grown up, but also who have passed in Mitrovica, has been a reference point for the city, not only because of the topic that is still current today, but also for the material and coexistence in the square. We never knew the author/authors, even though we researched so that they or their family members are informed about the initiative that we want to re. We found only the relative of the person who worked on the technical side, but not the author/authors. After what we did two years ago, a smaller copy for the third edition of Autostrata Bienale in Prizren, curated by Ovul O. Durmusoglu and Joanna Warsza, and which I call 'Moving monument', together with 'Autostrada' and the curators we believed that in the next edition we should return this work to the country of origin, in the city to which this work belongs. We hoped to return to the same form and material, in the fourth edition 'Autostrades...', which this time will also be held in Mitrovica, in cooperation with the municipality of Mitrovica and other supporters of the event. "Equality, work and education" as a topic are current and today, therefore, as a society and as a citizen, we thought we must join the motto of this work, therefore we believed that the work should be returned and it was returned from July 9 in the square of Mitrovica, where it will be there as a permanent work as it was.

**Keywords:** Public art, 60s, monument, moving monument

# Art Education through Integrating Outdoor Learning Practices as Sites of Memory in Kosovo

Arben Arifi

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

arben.arifi@ubt-uni.net

**Abstract.** Learning in nature through its immersive experience can be an avenue for critical inquiry into art making. In Kosovo, to some extent, there has been an excessive focus on the technique and style of art production, while criticism and critical thinking have been lacking. This is a known problem in art schools in many countries, where education often focuses more on the technical and formal aspects of art. The outdoor learning experience, through the study of the context of the local environment and culture, can help students and art students better understand the influence of the environment and culture on their artistic creativity. This can help them develop a more critical view of art and create works that reflect their reality and cultural identity. Different outdoor learning experience spaces, such as physical spaces in natural and urban environments, communicative spaces, collaborative spaces and media spaces, provide opportunities for developing artistic skills and critical thinking in different contexts. The art gallery is an important place for the display and appreciation of their artistic work, helping them to integrate their learning into a wider artistic and cultural context. Thus, using the experience of being still and using nature as a source of memory and inspiration, it is possible to positively influence artistic creativity and the development of a rich cultural identity for children from a young age, pupils, and even art students in Kosovo.

**Keywords:** art education, art making, outdoor learning, critical thinking, students, Kosovo etc.

# **CINEMATOGRAPHIC STYLE PROBLEMS (According to Bela Balazs point of view)**

Dr. Bekim Sele

Art and digital Media – UBT, Rexhep Krasniqi 56, 10000 Prishtinë, Kosovë

bekim.sele@ubt-uni.net

**Abstract.** Cinematographic style is started in large scale to apply changes, by including the technological achievements that now are greater and indivisible in the world of film art. People dealing with film even today are experimenting on their genre and styles by selecting different topics and treating with a professional and boldness approach.

In this piece of work, we will treat the approach and point of view of the great thinker and philosopher Bela Balazs, that in his important book “Filmkultura”, a great part has left for cinematographic style problems. It is important for us to see how he as treated the cinematographic style problems. Taking in consideration the time and the technological achievements at the time that author has been living, freely we can cast that with a great professionalism he brings out and arguments genuine theories of the world of film art, those that even now have place for usage.

**Keywords:** Style, cinema, technology, genre, literature.

# Fog Sculpture

Burim Berisha

UBT College 10000 Pristina, Kosovo

**Abstract.** The use of a specific site for research is one of the forms that help the development of sculpture in contemporary times. In this context, my work is focused on presenting a "mirror" of the damage we do to nature, and therefore to ourselves through pollution and the need we have for industry, the compromise we have to make. By applying the specific site as a starting point for the conception of a sculptural form we achieve a better communication, including in this case the history of the location. The work focuses on the research and use of different materials and techniques to create sculpture: air drawing, smoke sculpture, concept, sketch of portraits created by smoke naturally in industrial chimneys as organic drawings (air drawings). Wire sculptures give the impression of drawing in the air, they are also transparent sculptures that give more opportunities to be more interactive, in our case organic sculptural forms created by the smoke or steam of the power plant. Power plant chimneys are transformed into sculptures that capture the random moment of creating an aesthetically acceptable sculpture that is a symbol of development and destruction. While the smoke sculpture initiated by us shows the impact, we can have on these facts even though they are free and uncontrollable. Taking these beautiful images from an act of "damage and development" shows the fact that we humans take what we like and the rest is what follows us without us having the opportunity to control it.

**Keywords:** Fog, sculpture, nature, pollution, air drawing, smoke sculpture



# Stimulating decision-making through design and advertising

Dardan Luta

Art and digital Media – UBT,10000 Prishtinë, Kosovë

**Abstract.** The improvement of technology has made it possible for the masses to have easy access to graphic software, therefore even the products/advertisements of a category become very similar to each other and the design becomes a decisive element that makes this difference. To differentiate between products, each brand tries to create its own visual language and aims to give a message to the consumer about its identity.

Since advertising is such an important aspect of a brand, can consumer perceptions be stimulated or manipulated through graphic design? We will focus in the advertisements that companies in Kosovo have used for various campaigns such as political ones and other products in our market.

**Keywords:** graphic design, branding, brand image, consumer perceptions, manipulation, corporate identity, advertising, announcement, election campaign.

# Art education and mutual participation in teaching and learning of students and teachers.

Fitore Isufi Shukriu, Fatmir Mustafa

**Abstract.** The educational developments in Kosovo have been inevitably influenced by the circumstances of historical, political, and socio-cultural transitions. As a result the educational system operates with many gaps and in particular Art education usually doesn't prioritize student agency and empowerment. Given the context we need to frequently reflect on our professional activity as artists and the teaching methodologies we use as actors in the education system. By combining counter-formal education forms the aim is to show how teaching artists professional practice and experience can contribute to the advancement of experimental teaching and learning. Drawing on published material with constructivist approach to pedagogy, considering contextualized learning, and sharing empirical perspective, this paper aims to show that the Art teachers owe less to the curriculum of its study program and more to the knowledge and prior experience. The mutual artistic actions and reactions between teachers and students have not only try to change the point of view towards the prevailing formal education in Arts in Kosovo, but also about artists role itself in Art education system. In conclusion, will be presented a case study of the teaching experience with the students of Art and digital media at UBT in Kosovo during the Creative drawing course and Painting course in the period of 2019-2023.

**Keywords:** Experimental teaching and learning, Teaching artists, Experimental teaching, Art education, Creative drawing, Painting.

# I did not see it, I heard it

Gazmend Ejupi

Art and digital Media – UBT, 10000 Prishtinë, Kosovë

**Abstract.** Exhibition podcast is challenging the new way of thinking in curating. Our traditional way we used to experience the exhibitions is changing. Going through a global climate crisis. Shifting the roles of the viewers and the artist in gallery space, its challenging concept, especially in a place like Kosovo. The podcast will play the role of the artist and the artist will be the viewer. Our lack of art industry, we don't experience any new ideas of the global crisis that artists or curators brought to the public yet. Noise pollution is one of the most dangerous problems of our future, and this is my future curatorial concept. With over 200 podcasts from different industries, for the first time the viewers will experience the whole new attitude towards exhibition experience. Questioning the outcomes is endless, but understanding the problem is key.

**Keywords:** Exhibition, curating, pollution, noise pollution, podcast.

# EDUCATIONAL THEATRE AS A METHOD OF OVERCOMING THE CONSEQUENCES FOR WOMEN-SURVIVORS OF VIOLENCE DURING THE KOSOVO WAR

Marigona BEKTESHI FERATI (PHD)

National Academy of Theatre and Film Arts; Sofia, Bulgaria

marigonabekteshi3@gmail.com

**Abstract.** This study investigates the long-term consequences of sexual violence and overcoming trauma at survivors of sexual violence through educational theatre. Participants in this research were 30 women survivors of sexual violence during the war in Kosovo and 4 women were interviewed, who recounted in details the event of sexual violence and their lives after the war. For the quantitative part, three self-report questionnaires were utilized, the qualitative part was realized through a semi-structured interview, whereas the survivors' stories were transcribed, then used in the theatrical play "QUEENS WITHOUT CROWNS" which was part of this study. The first hypothesis, which is directly related to the experience of sexual violence and social acceptance, was not resulted as significant, however, from interviews were obtained results that confirm the impact of sexual violence on the social acceptance of survivors in their walks of life. The second hypothesis turned out to be confirmed because according to the results obtained victims of sexual violence have a high level of post-traumatic stress, whereas the data also confirm and third hypothesis that due to stigmatization, survivors are excluded and self-excluded from cultural activities. Meantime, as a way to overcome trauma, it has been proven that the theatrical performance realized based upon the stories of survivors has resulted in: reducing the stigmatization of victims and their social acceptance in their living and working circle and it has influenced as therapeutic process to victims to overcome trauma, it has directly influenced in education of family members towards the path of accepting victims, it has raised social awareness among the various spectators present in the artistic performance.

**Keywords:** sexual violence during the war, educational theatre, social acceptance, overcoming trauma

# **The role of augmented reality and virtual reality in education Study on teaching and learning experiencebased on AR/VR technology.**

Zymer Veliu

Art and digital Media – UBT, Rexhep Krasniqi 56, 10000 Prishtinë, Kosovë

**Abstract.** AR/VR is transformative technologies that are delivering immersive and interactive learning experiences every day. In this paper we will present the potential impact of AR/VR on teaching and learning, exploring how AR/VR increases engagement, understanding and retention among students. The objective is to analyze the practical implications of the use of AR/VR in educational settings, considering their benefits, challenges and future prospects. If lecturers use AR/VR technology for teaching, then education will be reshaped, creating comprehensive and attractive learning environments that prepare students for new challenges.

**Keywords:** AR-Augmented Reality, VR-Virtual Reality, Education, Experiential Learning, Immersive Technology, Distance Learning

# **IC-COMPUTER SCIENCE AND COMMUNICATION ENGINEERING**

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# Detection of Breath, Phonation and Cough Sounds Using Sound Feature Vectors and Artificial Neural Networks by Calculating Lung Forced Vital Capacity with Mobile Infrastructures

Oğuzhan AYDEMİR<sup>1</sup>, Gökhan AYDEMİR<sup>2</sup>, Edmond HAJRIZI<sup>1</sup>

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

<sup>2</sup>Haliç Üniversitesi, Çocuk Hastalıkları ve Sağlığı Bölümü, İstanbul, Türkiye

**ORCID IDs of the authors:**

O.A. 0000-0002-1611-0947; G.A. 0000-0001-9655-0530; E.H.: [0000-0003-2883-8860](https://orcid.org/0000-0003-2883-8860)

**Abstract. Objective:** In this study, it is aimed to calculate the tidal volume capacity with mobile infrastructures and to determine the O<sub>2</sub> and CO<sub>2</sub> values from breath, phonation and cough sounds with the help of artificial neural networks using voice feature vectors. In addition, it is aimed to develop a method that will enable computation of educforced expiratory volume via mobile devices.

**Materials and Methods:** Since sound disease diagnosis is basically a classification problem, tidal volume classification is considered as a pattern recognition problem. Our automatic O<sub>2</sub> and CO<sub>2</sub> classification study as a pattern recognition function includes three subcomponents; Identifying and obtaining features, Feature selection and Classifiers.

**Results:** In the study, a new dataset created from two different datasets was used; MFCC (Mel Frequency Cepstral Coefficients) Mel frequency kepsral coefficients of each sound in this new dataset were extracted and converted into png format spectrogram graphs. Sounds converted to picture format are classified by Convolutional Neural Networks (CNN), one of the deep learning algorithms in artificial intelligence. As a result, a very high performance has been achieved with the CNN network.

**Conclusion:** In this study, a system has been developed for the detection of voice-based lung capacity, O<sub>2</sub> taken into the vital area and CO<sub>2</sub> values exhaled by using artificial intelligence. Each image-converted sound is analyzed using Convolutional Neural Network (CNN), one of the algorithms in deep learning, which is one of the sub-branches of feature extraction and artificial intelligence. For the selection of this algorithm, studies with similar usage areas were taken into consideration; As a result of the inferences obtained from these studies, a path was followed. At the end of the system developed with the CNN network, a success of 99.60% was achieved. This performance shows that the created system works with high success.

**Keywords:** MFCC, Artificial Intelligence, Forced Vital Capacity, Expiration.

# Express Mail Management System

Alma Novobërdaliu, Blerim Zylfiu

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

alma.novoberdaliu@ubt-uni.net

blerim.zylfiu@ubt-uni.net

**Abstract.** . In a world where time is precious and globalization is a continuous challenge for businesses and individuals, the efficiency and speed of shipping have gained a new significance. In today's society, technology has a significant impact on how we communicate and share information. In this context, the evolution of the express mail system has resulted in significant changes in how we send and receive orders. Therefore, the goal of this research is to look at and rediscover what is needed for such an advanced and effective system. Building such a system is essential for everyone who needs quick and dependable distribution services, including the business community and individuals. The aim of this work is to examine the challenges and opportunities that arise during the development and use of a system like express mail. With a focus on factors like security, speed, cost, and the system's effect on the social and societal community, we will provide a thorough analysis of the advantages and difficulties of such a system. All of these issues will be addressed by using technologies such as: ASP.Net Core for the backend, ReactJs for the front-end and Microsoft SQL Server for the database. As a result, the development of the express mail system will have a positive impact on the growth of the business community and society by facilitating the transportation of goods and reducing the time required for the exchange of information and orders.

**Keywords:** system, mail express, shipping speed, security, time efficiency.



# Advancing Communication Efficiency: A Study of WebRTC, WebSockets, REDIS, and MongoDB in a Social Network Platform

Genc Abazi, Xhelal Jashari

UBT, Prishtina, Kosovo

ga47389@ubt-uni.net

xhelal.jashari@ubt-uni.net

**Abstract.** Human ancestors used to live and hunt in groups, communication was one of their main characteristics and needs for them to survive. Mankind has been actively trying to increase the efficiency and speed in communicating. Thanks to these advancements, we are in today's world, with this kind of technology. This research paper will explain a specific combination of different technologies that are commonly used among communication platforms. This combination consists of WebRTC peer-to-peer communication, WebSocket usage for remote-procedure-calls, REDIS cache database for real-time data, and MongoDB for persistence. Most of the technologies mentioned above are built to enable and increase the efficiency of communication. Efficient communication means conveying your message in less time, we will explore and implement these technologies using Golang and React JS. This implementation is a social network platform where users can have video calls, share their screens, and chat via text simultaneously. Each technology mentioned will be crucial in helping this platform achieve its optimal condition.

**Keywords:** Social Network Platform, Peer-to-Peer, Remote Procedure Calls, Real-Time, WebRTC, REDIS, Golang

# Development of a computer-based platform. Impact of these platforms on the field of education

Denis Kolaj, Besnik Qehaja, Elton Boshnjaku

UBT University, 1000 Prishtina, Kosova

dk49575@ubt-uni.net  
besnik.qehaja@ubt-uni.net  
elton.boshnjaku@ubt-uni.net

**Abstract.** The integration of computer-based platforms into education has transformed the learning landscape. This systematic review explores the impact of these platforms on students' learning performance, seeking to answer the question: "What is the impact of computer-based platforms on students' learning performance?". Through an exhaustive review of relevant literature, we synthesize a diverse range of studies across educational settings. Our findings unveil a multifaceted influence on learning performance, encompassing academic achievement, engagement, motivation, and skill development. We also delve into the moderating factors that shape the effectiveness of these platforms. This review not only illuminates the potential benefits of computer-based platforms but also goes a step further in identifying and delineating practical methods for enhancing learning performance. Drawing from this analysis, we present a web project developed using React.js, serving as a demonstrative showcase of some of these effective methods. In conclusion, computer-based platforms hold substantial promise for improving learning performance. This study offers invaluable insights for educators, policymakers, and researchers looking to harness technology's potential in education. It emphasizes the importance of tailored approaches and a nuanced understanding of contextual factors to maximize the impact of technology in the educational sphere

**Keywords:** learning platforms, computer-based, educational technology

# System for registration and management of workers

Edison Kastrati, Faton Kabashi, Lamir Shkurti

UBT, Higher Education Institution, Kosova

Email: ek48548@ubt-uni.net  
faton.kabashi@ubt-uni.net  
lamir.shkurti@ubt-uni.net

**Abstract.** Nowadays, almost all businesses, regardless of the number of employees, need to register and manage those employees, but the quality of registration and management depends on several factors. One of the most important factors is technology, which has revolutionized almost every profession and business. With the boom that technology has, businesses are moving from the more primitive way of storing data on paper to the more advanced one in computer programs such as Excel, etc., or programs that are created and intended for this topic, as it is in our case. This degree topic presents a web-based application that is efficient and secure for employee registration and management. The application will have a real-time database that will provide access at any time for the administrator to the data of the company's employees. The user interface of the application is designed to be easy to navigate and "friendly", it is also designed to adapt to different types of web browsers. Moreover, the application also includes the feature for generating detailed reports and extracting information specific to any workplace as needed. This project will be created using spring boot as framework for back end, thymeleaf and bootstrap for frontend and mysql for database.

**Keywords:** system, registration, management, business, workers.

# Blockchain in education: opportunities, applications and challenges

Elira Shala, Faton Kabashi, Lamir Shkurti, Mirlinda Selimaj, Laura Gjikokaj

UBT, Higher Education Institution, Kosova

Email: es43694@ubt-uni.net  
faton.kabashi@ubt-uni.net  
lamir.shkurti@ubt-uni.net  
mirlinda.selimaj@ubt-uni.net  
laura.gjikokaj@ubt-uni.net

**Abstract.** Blockchain is a decentralized data storage technology that has received a lot of attention in recent years, extending its application to many fields. At first it was thought that this technology could be used only in the finance sector, but later its uses have expanded to many sectors including education. Blockchain technology has several characteristics that make it suitable for application in systems where transparency is required, the assurance that the data being stored is unchanged. The potential this technology has shown to democratize data, reduce fraud and eliminate data manipulation has made it a transformative tool for many sectors, both public and private. The purpose of this thesis was to investigate what opportunities this technology offers for the education sector, what are its current applications and applications for the future and what are some of the main challenges that arise during the integration of this technology. The results of the research showed that the opportunities that this technology offers for the education sector are numerous. One of them is the verification of digital certificates and transcripts. By harnessing the power of Blockchain, educational institutions can issue indestructible digital credentials where qualifications can be verified with a high degree of reliability. This reduces the risk of manipulation and preserves data integrity. Blockchain has found application in what is known as 'continuous learning' where the record is kept for the whole the student's academic journey. Also, Blockchain offers opportunities and has found application in Peer-to-Peer decentralized learning platforms where educators from all over the world connect and communicate without any intermediaries and barriers. This also helps create more personalized and individual learning experiences. In many countries, Blockchain is also used to reduce the administrative burden by automating processes such as student admission, registration, payments, etc. In this way, efficiency is increased and errors are reduced. Many popular platforms such as Duolingo and Khan Academy have implemented this technology in their systems. Some of the challenges identified were: lack of knowledge about technology, lack of infrastructure for implementation, standards that regulate its work, etc.

**Keywords:** blockchain, education, application, opportunities, challenge.

# Deep learning's impact on autonomous vehicle evolution

Endrit Berisha, Faton Kabashi, Lamir Shkurti, Vehebi Sofiu, Mirlinda Selimaj

UBT, Higher Education Institution, Kosova

Email: eb47780@ubt-uni.net  
faton.kabashi@ubt-uni.net  
lamir.shkurti@ubt-uni.net  
vehebi.sofiu@ubt-uni.net  
mirlinda.selimaj@ubt-uni.net

**Abstract.** This paper presents a comprehensive exploration of the evolving landscape of autonomous vehicle technologies, focusing on both modular and end-to-end learning paradigms, with an emphasis on the significant role of deep learning. Through a combined approach of qualitative analysis and comparative review, the study draws on numerous sources, including research papers, industry documentation and real-world case studies, to assess the impact of deep learning on these paradigms. The initial findings highlight substantial advancements in autonomous vehicle development due to deep learning, particularly in areas like perception, decisionmaking and system adaptability. However, these areas operating independently within modular paradigm systems have their limitations, including issues related to maintenance, interpretation and incomplete information. On the other hand, end-to-end systems, represented by industry leaders such as Comma.ai, show a strong ability to be more adaptable, operate efficiently and provide cost-effective autonomous vehicle solutions. Furthermore, Tesla's transition from a modular approach to a vision-centered, end-to-end model underscores the growing potential of this paradigm. While the research explores both paradigms, the future of autonomous vehicle development lies in deep learning-powered end-to-end systems.

**Keywords:** deep learning, autonomous, vehicle evolution

# A Comparative Analysis of Pathfinding Algorithms in NPC Movement Systems for Computer Games

Vesa Morina, Rinesa Rafuna

UBT – Higher Education Institution, Prishtine, Kosovo

vesa.morina@ubt-uni.net  
rr47042@ubt-uni.net

**Abstract.** Non-Player Characters (NPCs) play a pivotal role in computer games, making them a focal point for game developers. The cornerstone of NPC behavior lies in the design of efficient pathfinding strategies, which are integral components of the underlying Artificial Intelligence (AI) models. This paper delves into the algorithms essential for realizing NPC pathfinding, with a specific emphasis on two prominent methods: the Dijkstra algorithm and the A\* algorithm. Our study is rooted in an extensive review of existing research in this domain, followed by a comprehensive comparative analysis of these algorithms. Through this comparison, we aim to shed light on the advancements achieved in this field thus far. Furthermore, we provide a succinct summary of the limitations and challenges that warrant continued investigation and research efforts. By offering a nuanced exploration of pathfinding algorithms and their implications for NPC movement systems in computer games, this paper contributes to the ongoing evolution of AI in gaming and serves as a valuable resource for game developers and researchers alike.

**Keywords:** Pathfinding Algorithms, Non-Player Characters (NPCs), Artificial Intelligence (AI) in Gaming, Dijkstra Algorithm and A\* Algorithm

# Development of the application for cinema management with .net technology

Enise Hasanaj, and Lavdim Beqiri

Kosovar, Peja, Kosovaeh47364@ubt-uni.net

Kosovar, Peja, Kosova lavdim.beqiri@ubt-uni.net

**Abstract.** The research discusses an internet platform dedicated to cinema management. The platform is built upon two key components: the user-facing part and the backend operations. The visual part, also known as the Frontend in the programming world, is developed using technologies such as HTML, CSS, and JavaScript, offering a simple and user-friendly interface. On the other hand, the server or backend where modifications and updates are made is built using ASP MVC Core and the C# programming language. For data management, SQL Server is used, which facilitates the staff's work in storing and accessing cinema-related information.

Overall, this system allows the administration to have complete control over all cinema functions. Responsibilities are divided among the main administrator, manager, and receptionist, making interaction with customers easier and more efficient. The platform primarily focuses on managing movie titles, screening rooms, movie schedules, reservations, ticket sales, and user management, providing a comprehensive solution for all these needs.

This online interface offers easy and quick access for both staff and customers to obtain the desired information. Another important advantage is that it helps minimize errors that can occur during various processes while significantly reducing operational costs. This platform is designed to be accessible by all team members, from the super-administrator who configures all system parameters to the customers who want to watch a movie, making the cinema available online 24/7.

**Keywords:** Internet platform, User-facing, Frontend, HTML, CSS, JavaScript, Backend operations, ASP MVC Core, C# programming language, Data management, SQL Server, Administration, Online interface.

# The Evolution of Computer Network Automation

Rinor Neziraj, Lavdim Beqiri, and Besnik Qehaja,

Kosovar, Peja, Kosova  
rn48601@ubt-uni.net

Kosovar, Peja, Kosova  
lavdim.beqiri@ubt-uni.net

Kosovar, Prishtina, Kosova  
besnik.qehaja@ubt-uni.net

**Abstract.** The evolution of computer network automation represents a significant development that has had a profound impact on enhancing efficiency, advancing technology, and transforming the functioning of computer networks in the modern era. In this study, we have examined the history of computer networks and network automation and analyzed how technology has evolved from manual and direct approaches into an automated and innovative interface.

This research identifies the challenges and opportunities brought about by computer network automation, including enhanced security, network efficiency, and flexibility. Furthermore, we will focus on network automation, identifying the key strategies and technologies that have been used to make networks more advanced and easier to manage.

Our findings will demonstrate that computer network automation is a pivotal evolution that has influenced various aspects of computer networking, including the development of advanced infrastructure, rapid and accurate decision-making, and overall network security. These changes hold particular significance in today's world of information and communication technology, where computer networks serve as the foundation for ensuring the efficient and secure transmission and utilization of information.

Finally, we will examine the advantages and challenges of computer network automation and their impact on information security and business efficiency. In conclusion, this study will provide a comprehensive overview of the development of network automation and offer suggestions and recommendations for the future of computer networking.

**Keywords:** Computer Network Automation, Efficiency enhancement, Technological advancement, Network transformation, Flexibility, Rapid decision-making, Accurate decision-making, Network security, Information technology, Communication technology, Information security, Business efficiency, Future of computer networking.



# USING THE INTERNET OF THINGS IN PERSONAL HEALTH

Mehmeti Eros, Leka Hizer

UBT, Higher Education Institution, Kosova

em52473@ubt-uni.net  
hizer.leka@ubt-uni.net

**Abstract.** With the increase in development of technology and with the evolution of the Internet, a wide network was created, which is composed of devices with different sizes and multiple functions, known as Internet of Things (IoT). Internet of Things has found high usability in different industry sectors, like: military sector, aerial, educational, medical and in many other sectors. It had a great influence in the medical sector, by making the process of monitoring medical data easier, medication management, diagnosis of diseases, saving and better analysis of the data, and reducing patients expenses. These monitoring devices like smartphones, smartwatches, glucose and oxygen monitors, have applications that collect patient data in real time, afterwards the data is shown to the users. They use different sensors to monitor metrics like heartbeats, quality and longevity of sleep, burned calories and many more. The potential for future development of Internet of Things in the personal health aspect is really high, also including here mental health which will be discussed in this thesis.

**Keywords:** Internet of Things, Electronic Health, Electrocardiogram, Internet of Body, etc

# FACE RECOGNITION ALGORITHMS IN RECORDING STUDENT ATTENDANCE DURING LECTURES

Tahiri Fitore, Leka Hizer

UBT, Higher Education Institution, Kosova

ft53961@ubt-uni.net  
hizer.leka@ubt-uni.net

**Abstract.** Usage of face detection and face recognition algorithms nowadays is widely applied, especially in the applications where user security is essential. Every smartphone is now equipped with face recognition for Face ID authentication. This paper serves as research for the challenges encountered by university students while recording their attendance during lectures. This research is done by conducting a survey with a number of students from different universities within the Republic of Kosovo. Benefits of implementing a face recognition system for recording student attendance in lectures have been analysed. A student attendance system will be proposed and implemented with Python libraries and Computer Vision techniques. The model created is intended to be implemented in a university system in order to automatically save student attendance in an Excel sheet. The model should serve as a prototype. Furthermore, algorithms to increase accuracy of the model will be discussed.

**Keywords:** Machine Learning, Computer Vision, Graphical User Interface, Local binary patterns, Radio Frequency Identification, etc.

# **Machine Learning, Computer Vision, Graphical UserInterface, Local binary patterns, Radio Frequency Identification, etc.**

Ademi Rina, Leka Hizer

UBT, Higher Education Institution, Kosova

ra47864@ubt-uni.net

hizer.leka@ubt-uni.net

**Abstract.** This study focuses on Machine Learning technology and its use in everyday life. In this paper, we will analyze the historical development of Machine Learning technology, its key components, and its applications in daily life, particularly in the fields of healthcare, education, its role as a personal assistant and the implementation of recommendations and predictions in various applications. Furthermore, we will explore the need for Machine Learning in the business world and the risk associated with data usage in this context. Finally, we will examine the latest trends in Machine Learning development and the future possibilities for its use in various life domains. This analysis will be beneficial in understanding the functionality of Machine Learning in the background together with the risks and opportunities of Machine Learning in this rapidly evolving technological landscape.

**Keywords:** Machine Learning, Technology Trends, Machine Learning Evolution, Recommendations of Machine Learning.

# IoT-Based Smart Garden System

Milot Morina, Astrit Hulaj, Besnik Qehaja

UBT – Higher Education Institution, Prishtine, Kosovo

mm53266@ubt-uni.net  
astrit.hulaj@ubt-uni.net  
besnik.qehaja@ubt-uni.net

**Abstract.** This research presents a Smart Garden System that leverages the capabilities of the Arduino microcontroller, IoT technology, and a multi-sensor suite for intelligent and efficient garden management. The system is designed to cater to the unique needs of plants by utilizing data from moisture, temperature, humidity, and LDR (Light Dependent Resistor) sensors. Based on predefined threshold values, the system autonomously controls the water pump and light bulb, ensuring precise and optimized care for the garden. The system's core hardware comprises an Arduino microcontroller board, acting as the central hub for sensor integration and actuator control. One of the system's highlights is its automated irrigation functionality. By analyzing soil moisture levels, the system triggers watering actions precisely when needed, effectively reducing water wastage and promoting water-efficient gardening. Moreover, user feedback indicates a notable decrease in manual labor required for garden upkeep. This project represents a significant step towards sustainable and intelligent gardening practices by harnessing the power of Arduino Uno and IoT technologies. As smart agriculture gains traction worldwide, the Smart Garden System's adaptability and potential for scalability make it a valuable contribution to the realm of connected green technologies. Furthermore, the Smart Garden System utilizes an LDR sensor to gauge natural light intensity. By continuously monitoring light levels, the system can supplement natural light with the light bulb, ensuring plants receive the appropriate amount of light during darker periods or inclement weather while conserving energy when sufficient natural light is available.

**Keywords:** Arduino Uno, Smart Garden, Automation

# DORMITORY MANAGEMENT SYSTEM FOR UBT COLLEGE

Bleona Gërbavci, Blerim Zylfiu

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

bleona.gerbavci@ubt-uni.net  
blerim.zylfiu@ubt-uni.net

**Abstract.** This research focuses on the complex and time-sensitive task of managing student accommodation services within the dormitories of UBT College. The objective is to modernize the dormitory allocation process by replacing manual procedures with a cutting-edge web-based platform. The proposed system is designed to automate various aspects of dormitory management, encompassing applications, electronic payments, student allocation to dormitories and rooms, and the selection of roommates. By optimizing these services, the system aims to reduce administrative burdens and enhance the overall experience for both students and administrative staff. The outcomes of this research led to the development of the Dormitory Services Management System, specially designed to meet UBT College's particular needs. This system aims to simplify administrative tasks, elevate the student experience, and introduce a more advanced approach to dormitory management.

**Keywords:** digital system, dormitory management, automation, student experience, administrative efficiency

# AUTOMATION AND OPTIMIZATION OF COMPUTER NETWORKS

Valdon Vitija, Besnik Qehaja, Edmond Hajrizi

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

vv47343@ubt-uni.net  
besnik.qehaja@ubt-uni.net  
edmon.hajrizi@ubt-uni.net

**Abstract.** The progressive growth of technology globally, sometimes even exponentially in certain technology subfields, is undoubtedly a result of global networking. The number of devices and their connections/correlations has reached massive proportions. With the ever-increasing demand for internet connectivity and faster access, we need to design optimal network structures for every category of clients. These network structures must meet specific parameters to be considered optimal. Networks must have scalability potential, which should be the primary focus of global ISPs or ISPs where each of their clients is a lower-level ISP in the hierarchy. Networks should provide the potential for rapid internet access speed for clients. Another critically important parameter is internet accessibility from a temporal perspective. Based on the above-mentioned parameters, we see that they are extremely important, but not exclusive. These can be optimally fulfilled with continuous monitoring and automation of network structures. Micro-level analysis/monitoring of every aspect of network structure creates a massive and highly valuable dataset that can be used for modeling systems to predict future business issues (from the perspective of ISPs) and make more informed decisions for optimizing these networks

**Keywords:** Devices, Connections, Network structures, Scalability, ISPs (Internet Service Providers), Monitoring, Automation, Micro-level analysis, Modeling, Optimization

# Applying functions $f: D_1 \times D_2 \times D_3 \rightarrow R^3$ , $f: D_1 \times D_2 \rightarrow R_2$ for encryption and decryption of data within the field

Azir Jusufi<sup>1</sup>, Blinera Zekaj<sup>2</sup>, Diellza Berisha<sup>3</sup>, Bukurie Imer-Jusufi<sup>4</sup>

<sup>1, 2, 3</sup>UB-Higher Education Institution, Prishtinë

<sup>4</sup>Univerisiteti “Nënë Tereza “-Shkup

azir.jusufi@ubt-uni.net  
blinera.zekaj@ubt-uni.net;

diellza.berisha@ubt-uni.net  
bukurie.imeri@unt.edu.mk

**Abstract.** The study of Cryptosystems is highly important, and there is valuable scientific work dedicated to them. Cryptosystems are mathematical structures related to data encryption and decryption, dealing with secrecy and authenticity. In fulfilling these requirements, cryptography plays a crucial role, where many researchers have come up with various proposals and developed algorithms that have contributed, to some extent, to ensuring the confidentiality, integrity, and verification of given information. However, the issue of internet security through modern cryptography has become quite complex. Modern encryption systems are built upon complex mathematical algorithms and employ a combination of symmetric and asymmetric key encryption schemes to ensure secure communication. The use of the function

$f: D_1 \times D_2 \rightarrow R_2$  for encrypting figures provides an effective and secure method to protect the privacy, security, and confidentiality of sensitive data, such as works of art or various sketches. The utilization of functions  $f: D_1 \times D_2 \rightarrow R_2$  operating in a two-dimensional space encrypts the figures in a way that makes it challenging for unauthorized individuals to decrypt their shape and structure.

**Keywords:** Encryption, decryption, functions, commutative functions, figures, works of art.

# Case management system

Fat Sijarina, Blerim Zylfiu

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

fat.sijarina@ubt-uni.net  
blerim.zylfiu@ubt-uni.net

**Abstract.** The way cases are being managed is a very complicated topic and at the same time, there is a huge need for reformation in different segments of it. Research like this was made to find weaknesses, problems, gaps, and every other anomaly in the current form of investigation. The main idea of this project is to provide a digital system that offers a comprehensive solution to manage cases from the moment they happen until they are completely closed.

The system developed in this project aims to offer a platform through which grows effectiveness of cooperation and collaboration between every official person included in the investigation cast. By providing a better organization of cases, conveyance of their status in realtime, also an opportunity that the responsible person can assign tasks so the process flows as it should, this system will have an extraordinarily positive impact in this field.

The development of this system utilizes various technologies, including ReactJs for the front-end, .NET for the back-end, and Microsoft SQL Server for the database. With this stack of technologies, you can ensure a system with good performance, fast, and safe.

The results achieved after the development of the Case Management System fully align with user requirements, ensuring the best possible user experience and efficient organization.

**Keywords:** system, case management, digitalization, user experience, good organization.



# Cloud applications leveraging serverless and container resources

Fisnik Doko

Mother Teresa University, Faculty of Informatics, 1000 Skopje, Macedonia

fisnik.doko@unt.edu.mk

**Abstract.** The development of software solutions is evolving through the years because of the new technologies and new infrastructure. In the last decade cloud technologies have introduced a variety of resources to deploy and run applications, providing lift and shift of existing applications and supporting cloud first applications. The latest evolutions these days are around serverless technology and leveraging container infrastructure in the cloud, while moving away from the traditional PaaS hosting resources. There is a vast amount of work and trends all around the world to move applications towards serverless and container technologies. In this paper will be analyzed the evolution of PaaS resources used to deploy applications. It will cover serverless hosting resources such as functions, including serverless databases and other resources with serverless capabilities in Microsoft Azure eco system. Analysis will continue on resources for hosting containers, their cons and pros for the specific scenarios. The aim is to compare their usage, capabilities and readiness for specific scenarios. The paper will also provide architecture using the resources above, while providing high security in place and readiness for industries such as healthcare and finance

**Keywords:** cloud applications, serverless, containers

# Automated Design Pattern Generator: Empowering Student Learning in Software Design

Blerina Rrmoku, Edmond Jajaga

UBT – Higher Education Institution – Prishtine

blerina.rrmoku@ubt-uni.net

edmond.jajaga@ubt-uni.net

**Abstract.** This paper presents an innovative system for enhancing the learning and application of software design patterns. It offers an interactive platform for beginners in software development, enabling them to submit code and receive automated suggestions for incorporating design patterns. The system uses predefined design pattern examples to analyze and transform user code, reinforcing both theoretical understanding and practical implementation skills. The user-friendly interface guides students, making it easier to integrate design patterns into their code. This system enhances the learning experience by automating pattern integration and contributes to improving software development practices for novice developers. In conclusion, the implemented system serves as a valuable tool for beginning software developers to not only understand the theoretical foundations of design patterns, but also to implement them. By automating the integration of design patterns into user-provided code, the system provides an engaging and practical approach to learning them, ultimately contributing to the improvement of software development practices.

**Keywords:** Design Pattern, Software Design, Learning Platform, Scalability, Learning Outcomes

# Review of Artificial Intelligence Implementation in Electronic Design Automation Methods and Tools

Katerina Kostova <sup>1</sup>, Lavdim Menxhiqi <sup>2</sup>, Blerim Zylfiu <sup>2</sup>, Galia Marinova <sup>1</sup>

<sup>1</sup>Technical University of Sofia, Sofia, Bulgaria

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

kmkostova@tu-sofia.bg, gim@tu-sofia.bg  
{lavdim. menxhiqi. blerim.zylfiu}@ubt-uni.net

**Abstract.** The paper is a review of the implementation of artificial intelligence (AI) in electronic design automation methods and tools. The implementation of AI in Modelling, Simulation, Synthesis, and integrated circuit (IC) Layout electronic design automation (EDA) Tools is first considered then the AI for printed circuit board (PCB) design tools is studied. The knowledge base and machine learning (supervised and reinforced learning) with neural networks (NN), multi-objective optimization, and hybrid method and the corresponding mathematical methods are discussed. Validation examples are considered. Since AI is a breakthrough innovation factor, the impact of its current and expected implementation in EDA tools by company developers on the market is discussed.

**Keywords:** management, recycling, waste, environment, pollution, landfill

# Efficient Spam Email Detection with WEKA: A Comparative Analysis of Naïve Bayes, Support VectorMachine, and J48 Decision Tree Algorithms

Greta Ahma

UBT - Higher Education Institution, Faculty of Computer Science andEngineering, Prishtine, Kosove

greta.ahma@ubt-uni.net

**Abstract.** As we know, email is an effective communication tool and the fastest way to send information from one place to another, saving time and cost. However, the use of email is affected by attacks that involve unwanted mail. Spam is unwanted email or can be said to represent bulk data flooding the internet with numerous duplicates of similar messages, in an attempt to force people to open them. To address the increasing problem of unwanted email on the internet (spam), interest in spam filtering also grows in line with the circumstances. In this study, I examine various spam detection techniques. In this study, I have used WEKA. InWeka, we have employed different classification algorithms such as Naïve Bayes (NB), Support Vector Machine (SMO), and J48 Decision Tree. Finally, the best classifier for unwanted email identification is determined based on algorithm accuracy and performance time.

**Keywords:** Spam, Messages, WEKA, algorithms, Naïve Bayes (NB), Support Vector Machine (SMO), J48 Decision Tree, Classifier, accuracy.

# Usage of the fractional functions of the form $(x)=ax+bcx+d$ , $cx+d \neq 0$ for data encryption and decryption

Azir Jusufi, Meriton Reqica, Mirlina Reqica

UBT-Higher Education Institution

azir.jusufi@ubt-uni.net  
mr40004@ubt-uni.net  
mirlinda.reqica@ubt-uni.net

**Abstract.** The study of Cryptosystems is highly important, and there exist valuable scientific works about them. Cryptosystems are mathematical structures related to the encryption and decryption of data, which deals with secrecy and authenticity. In fulfilling these requirements, cryptography plays a significant role, where many researchers have come up with various proposals and developed algorithms that have somewhat contributed to the security of confidentiality, integrity, and data verification. However, the issue of securing the internet through modern cryptography has become quite complex. Modern encryption systems are based on complex mathematical algorithms and apply a combination of symmetric and asymmetric key encryption schemes to ensure communication security. In this paper, we present a new cryptosystem based on commutative composite functions such as the algebraic homomorphic functions of the form  $fx=ax+bcx+d$ . After the necessary theoretical overview, we provide the encryption and decryption procedures accompanied by relevant examples, as well as the corresponding software implementation of this cryptosystem [14], [15].

**Keywords:** Encryption, decryption, algebraic homomorphic functions, commutative composite functions.

# Architecture for communication between the user interface and the server (BFF - Backend For Frontend)

Prof.dr.sc ing Muhamet Avdyli, Muhamet Sadiku BSC Ing,

muhamet.avdyli@ubt-umi.net  
ms39407@ubt-uni.ne

**Abstract.** Security in information technology environments has become a critical point, with the growth of web and cloud-based applications and services. Security challenges are not only related to protecting information and data from unauthorized access and breaches but also ensuring the integrity and availability of services. The evolution of technology has changed the flow of software development and has offered new opportunities for organizations and individuals to meet their needs and objectives, but has also brought new risks and challenges. Web and cloud-based applications and services have increased flexibility and access to technology, allowing collaboration and innovation, but require strong security measures to protect information and data. This importance of security in information technology has demanded new and innovative strategies for risk management and protection of information assets. The "Backend for Frontend" (BFF) model is a software development strategy that creates a customized intermediary layer for each user interface (UI), as part of the microservices architecture. This intermediary layer enables simpler and more efficient communication between frontend and backend, adapting to the specific needs of each UI and allowing developers to better manage business logic, data, and application performance. The use of the BFF model allows faster and more sustainable development, providing a better user experience and increasing developer productivity. The BFF model is particularly useful in environments where different user interfaces require different logic and data handling, as in the case of mobile and web applications. The "Backend for Frontend" (BFF) is a software development methodology that serves as an architectural solution to address the challenges of integrating frontend and backend in today's microservices systems. BFF helps in creating a customized layer for each user interface (UI), allowing the development of backend services focused specifically on the needs of the user interface and accurately responding to business demands.

**Keywords:** server, Backend for Frontend" (BFF), frontend, user interface, web.

# Using blockchain in healthcare

Erodina Sejdiu, Faton Kabashi

UBT, Higher Education Institution, Kosova

Email: es49107@ubt-uni.net,  
faton.kabashi@ubt-uni.net

**Abstract.** Blockchain technology has emerged as a technology innovation with the potential to transform various industries, including healthcare. The use of blockchain technology in healthcare is a promising solution that has the potential to revolutionize the way healthcare data is managed and shared. Blockchain technology provides a decentralized and intangible system that can be accessed by authorized parties from anywhere in the world. Blockchain enables secure and transparent management of trial data, ensuring the integrity of results and preventing data manipulation. Smart contracts can automate consent management, simplify participant recruitment, and facilitate data sharing between researchers while protecting patient privacy. This means that healthcare data can be shared securely and efficiently between patients, healthcare providers and other stakeholders. Additionally, the use of blockchain technology can help ensure the integrity and authenticity of healthcare data, which is critical to ensuring patient safety and privacy.

**Keywords:** Blockchain, Healthcare, application.

# **An a Internet of things (IOT) in education:Opportunities and Challenges**

Labinot Krasniqi, Faton Kabashi

UBT, Higher Education Institution, Kosova

lk34259@ubt-uni.net

faton.kabashi@ubt-uni.net

**Abstract.** Nowadays, the Internet has become an indispensable part of life, Internet of Things (IoT) devices are growing rapidly in many aspects by allowing the connection and remote control of a network infrastructure that makes human life more convenient and easier. The trend of IoT in education has started to prevail, which leads to the need to design suitable educational activities. A widely adopted educational model that responds to this demand is the STEAM education model. The Internet of Things (IoT) has the potential to transform education by profoundly changing the way schools, colleges, and universities collect data, interface with users, and automate processes. IoT refers to the networking of physical objects through the use of embedded sensors, actuators, and other devices that can collect and transmit information about campus activity in real time. When IoT is combined with technologies such as user mobility and data analytics, it brings a new paradigm to education. This research aims to gather evidence and document the Internet of Things (IoT) in education and the main aim is to elaborate on the opportunities and challenges of IoT in education.

**Keywords:** IoT, education, challenges, opportunities, technology.



# Internet of Things (IoT) in healthcare

Ibadete Gashi, Faton Kabashi

UBT, Higher Education Institution, Kosova

Email: ig47496@ubt-uni.net, faton.kabashi@ubt-uni.net

**Abstract.** The Internet of Things is a technology that promises to significantly change people's lives in today's world. In recent years, IoT has impacted every aspect of life, including healthcare, where it has become highly productive in improving the quality of medical services provided to patients. Using sensors, IoT is capable of continuously and in real-time monitoring the health status of patients. This is particularly helpful for patients with chronic illnesses as it can assist in preventing various complications. Below, we will discuss the theoretical context of IoT, explaining the concepts of IoE (Internet of Everything), IoT architecture, and the role of telemedicine. An analysis is then conducted on several IoT devices used for health monitoring. This includes the Helo Wristband for blood pressure monitoring, AliveCor for heart monitoring, Baby Check for infant health monitoring, and an analysis of the case study of the use of the Smart Sock. The results encompass demographic aspects, physiological norms, false-positive alarm cases, and clinical significance. Through this study, the aim is to provide a detailed overview of the impact of IoT on health monitoring, addressing challenges and advancements in this technology in the healthcare field.

**Keywords:** Internet of Things, Healthcare, Smart Sock.

# Development and Evaluation of a Real-Time Communication Web Application Using WebSocket's, React, Node.js, and MongoDB

Albijon Hyseni, Lamir Shkurti, Faton Kabashi, and Vehebi Sofiu

UBT, Prishtina, Kosovo

{ah48831, lamir. shkurti, faton. kabashi, vehebi.sofiu}@ubt-uni.net

**Abstract.** Web applications are becoming increasingly popular in recent years and have changed the way people communicate on the web. These applications have become an essential part of our daily lives, as they allow us to communicate with people in real time and stay connected with friends, family and colleagues around the world. In the present tense applications for real-time communication have become even more important as work in distance and social distancing have become a normal aspect of our lives. In this paper, we have created a web application that will facilitate real-time communication between users. The application was developed with the most modern technologies, using React, for the front-end part which helps us to create dynamic components and reusable. The back-end part was developed with Node.js while the database was created with MongoDB. To achieve realtime communication between two users, we have implemented the Socket.IO package, a widely utilized tool for establishing secure and reliable connections. The application addresses the needs of remote communication by creating a safe, convenient and reliable environment for the community. We tested our application under the demands of 100 users in simultaneous communication. The application showed good performance. Also, we analyzed the performance of our application by creating the same application with PHP and MySQL technology. Research shows that the chat application built with React and MongoDB, Node.js outperforms the application built with PHP and MySQL in real time in terms of speed.

**Keywords:** chat, Chat Application, Socket.IO, Node.js, React.js MongoDB, PHP, MySQL

# **Dizajnimi dhe zhvillimi i mekanizmit të rekomandimit me performance të lartë dhe të shkallëzuar duke përdorur Kafka, Spring Boot dhe algoritmat e filtrimit bashkëpunues**

Ilirian Thaçi

**Abstract.** Recommender systems have become an indispensable part of human daily life due to the large amount of information where in this case information filtering must be implemented that limits the capabilities of the recommender system and improving the user experience by helping users to get what they themselves want. The goal of this implementation is the recommendation mechanism that is extremely efficient and scalable, this document includes details about the integration of Kafka, Spring Boot and collaborative filtering algorithms in the recommendation mechanism. This integration shows the latest model of the recommender mechanism that aims to provide recommendations as personalized and accurate as possible. With this combination of high technologies it creates a modern mechanism designed to provide personalized recommendations to users effectively. The current state of technology has brought significant changes in the way users interact with the system, leading to the need for systems more advanced recommendations. These systems use interactivity and user preferences to create personalized suggestions, improving the user experience across different platforms. To meet this requirement, the integration of Kafka, Spring Boot and collaborative filtering algorithms is the most compact, fast and powerful solution to meet the needs of the advanced recommendation mechanism. Kafka, serving as a distributed streaming platform, is the focal point of the application architecture facilitating real-time data collection and distribution. Kafka's ability to scale and asynchronize the system effectively makes it suitable for managing large amounts of data and user interactions. Spring Boot on the other hand is a powerful framework for developing applications and complements Kafka by enabling the rapid creation of microservices with the modular structure and automation also increases the flexibility and ease of maintenance of the recommendation system. Within the application, with the implementation of collaborative filtering algorithms, interactions are examined to discover connections and similarities between users and items with the use of techniques such as matrix factorization or nearest neighbor methods, accurate recommendations are provided. By combining these technologies, the recommendation mechanism with high performance and scalability is achieved.

**Keywords:** Photovoltaics, Grid connected, Orientation of module, Slope angles, Performance ratio.

# Passive Optical Network with Modular Optical Line Terminal in Software Defined Environment

Jakup Ratkoceri

UBT Higher Education Institution, Faculty of Computer Science and Engineering, Pristina, Kosovo  
University of Twente, Faculty of Engineering Technology, Enschede, The Netherlands

**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 [1]. Passive optical networks (PON) has become a technology of choice as future proof solution [2], 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) [3]. 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 [4]. 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) [5] into virtualized, software-based network functions (VNFs). The VNF architecture is hardware independent and can be hosted on any hypervisor and hardware [6]. 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. In the traditional PON, the optical line terminal (OLT) supports multiple layers of traffic management and shaping, as well as Layer 2 and 3 switching functions. In most cases, the network management systems (NMS) for conventional OLTs are proprietary. This means that the OLT functionality includes the control software, Layer 2/3 switching, the PON medium access control (MAC) layer, and the PON physical (PHY) layer. These functions can be split into several parts so that PON specific functions such as MAC and physical layer optics as well as generic network functions can be enabled. This concept helps us to create modular OLT.

A comparison of the differences between traditional and modular OLT is presented in Figure 1. The main difference is that the PON MAC functions are moved from the PON line card to the enhanced small form-factor pluggable (SFP+), which supports specific PON functions such as bridging, MAC layer, and physical layer optics.

Integrating these specific PON functions into an SFP+ module allows the use of a non-proprietary white-box switch environment to accommodate these micro-OLTs. The management interface could be a Telecom Element Management System (EMS) or an SDN that supports NECONF and RESTAPI interfaces. This will provide much-needed flexibility to telecom operators and the cable industry to meet the ever-increasing demand for higher broadband services.

# A DSL Framework for requirements engineering.

Tea Tavanxhiu, Kozeta Sevani

University of Tirana Tirana, Albania

tea.tavanxhiu@unitir.edu.al

kozeta.sevrani@unitir.edu.al

**Abstract:** This research paper explores the integration of Domain-Specific Languages (DSLs) as a modeling framework for requirement engineering in software development lifecycle. The instantiation of the DSL is enabled form a proposed architecture of the Framework. The study investigates the benefits and challenges of using DSLs, emphasizing increased involvement of domain experts, reduced delivery time gaps, wider visibility, and reduced technology dependency. Through an Active Design Research (ADR) methodology, the paper consists in the execution of the first ADR cycle, proposing design principles for a DSL Framework. The findings highlight the importance of integrating domain knowledge, conceptual modeling, and semantic enrichment in requirement engineering. Further refinement of the empirical studies and feedback gathering from users on the proposed DSL framework will be part of the research project of the authors starting with this.

**Keywords:** requirement engineering, information system design theory, action design research, domain specific language

# Creating a Block-Diagram System for Continuous and Discrete -Time Signals

Vehebi Sofiu, Gresa Shala, Faton Kabashi, Lamir Shkurti, Mirlinda Selimaj

UBT- Higher Education Institution, Kalabria 65, 10000, Prishtinë, Kosovë.

**Abstract:** Understanding and analyzing the behavior of systems is essential for designing engineering solutions for efficient and reliable signals. Concise mathematical descriptions of linear time-invariant systems that provide powerful techniques for system modeling, prototyping, analysis, and simulation. This paper delves into the study of transform system function algebra, analytical representations of block diagrams for continuous-time signals through practical differentiators. Modeling algebra consists of blocks that represent different parts of a system and signaling lines that define the relationships between the blocks. Block diagrams are used in electronic fields such as feedback, communication and signal control theory. Realization of practical signal systems is functionalized with: integrators, differentiators, adders and algorithmic multipliers as basic elements used to build the block diagram. The realization of a continuous-time system means the representations of the verbal description in the innovative practices of the representations of the differential equations with the sampling theorem corresponding to the function of Laplace and Z-Transforms as a simulating connection of the signal. Graphical simulation for static and dynamic systems where the block diagram is represented by other product functions complicates the system over time since the signal inputs are not in step with the time space based on the model configuration and problem-solving algorithms. The degree of convolution in this research shows that the signal is implied by the algebraic scaling operations of the properties of the Fourier transforms from which the operational simulation manipulations are performed using the MATLAB platform.

**Keywords:** Block Diagram, mathematical modulation, signal, transformations, configuration.

# Navigating the Future of Hospital Management: A Digital Solution for Departmental Coordination

Gresa Shala, Vehebi Sofiu, Faton Kabashi, Lamir Shkurti, Mirlinda Selimaj

UBT- Higher Education Institution, Kalabria 65, 10000, Prishtinë, Kosovë

**Abstract:** Efficient hospital management and seamless departmental coordination are essential components of high-quality healthcare delivery. In this era of advancing technology, digital solutions have emerged as powerful tools to address the complexities and challenges faced by healthcare institutions. This paper explores the landscape of digital solutions designed to enhance hospital management and foster improved coordination among various departments. Efficient hospital management is a cornerstone of quality healthcare delivery. To this end, the study delves into the development and application of digital tools. These tools range from software solutions enhancing medication management after hospital discharge to mobile health applications designed for practical and swift hospital operations. Furthermore, the paper explores the innovative use of block chain technology to secure and streamline Electronic Medical Record (EMR) management. By analyzing these digital innovations and their impact on healthcare, this paper not only underscores their usability and efficiency but also highlights the imperative need for ongoing evaluation and quality assessment. It concludes by emphasizing the great potential of these solutions in revolutionizing departmental coordination within hospitals, ultimately contributing to enhanced patient care and healthcare system efficiency. As the healthcare landscape evolves, embracing these digital solutions emerges as a crucial step toward navigating the future of hospital management. Further research and implementation are warranted to harness their full capabilities and drive a paradigm shift in healthcare administration.

**Keywords:** efficient management, digitization, communication system, operational care.

# **5G sustainability and Use of 5G to support other sectors to become more sustainable**

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**Abstract.** 5G technology in general is more energy efficient than other previous generations and can serve as enablers of energy efficiency for other sectors, but unless a holistic approach is adopted by the operators, it is very difficult to single out a specific technology and claim that it is very energy efficient. 5G can be more efficient than 4G and other generations if we measure this efficiency per bit-basis, but increase of energy efficiency leads to the reduction of the cost, both for the service providers and users, and as such increases the demand, which subsequently leads to the increase of power consumption. Therefore, it is difficult to conclude that 5G overall is more energy efficient than other technologies.

This paper shows how 5G can help different vertical industries, i.e. transportation, energy sector, smart cities, manufacturing etc., become more energy efficient and reduce the energy losses. This paper also shows how 5G can itself be more energy efficient and describes the efforts and activities required to make 5G more sustainable and fully NetZero technology.

**Keywords:** 5G sustainability, NetZero, GHG emission, CO<sub>2</sub>, AI, IoT, ICT



# IoT) in Healthcare

Ibadete Gashi, Faton Kabashi

UBT, Higher Education Institution, Kosova

Email: ig47496@ubt-uni.net, faton.kabashi@ubt-uni.net

**Abstract.** The Internet of Things is a technology that promises to significantly change people's lives in today's world. In recent years, IoT has impacted every aspect of life, including healthcare, where it has become highly productive in improving the quality of medical services provided to patients. Using sensors, IoT is capable of continuously and in real-time monitoring the health status of patients. This is particularly helpful for patients with chronic illnesses as it can assist in preventing various complications. Below, we will discuss the theoretical context of IoT, explaining the concepts of IoE (Internet of Everything), IoT architecture, and the role of telemedicine. An analysis is then conducted on several IoT devices used for health monitoring. This includes the Helo Wristband for blood pressure monitoring, AliveCor for heart monitoring, Baby Check for infant health monitoring, and an analysis of the case study of the use of the Smart Sock. The results encompass demographic aspects, physiological norms, false-positive alarm cases, and clinical significance. Through this study, the aim is to provide a detailed overview of the impact of IoT on health monitoring, addressing challenges and advancements in this technology in the healthcare field.

**Keywords:** Internet of Things, Healthcare, Smart Sock.

# **IC-DENTISTRY**

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# Evaluating the impact of early childhood caries on the development of permanent teeth decays

Dr. Aferdita Gashi Rizaj, Prof. Dr. Aida Rexhepi

**Abstract.** Dental caries is one of the most prevalent dental diseases in children, especially the form of caries known as early childhood caries. The aim of study is to assess whether the treated and untreated teeth with earlier childhood caries will have impact on permanent dentition decays especially on permanent first molar. The first permanent molars erupt slowly without any difficulty. Therefore, in most cases its presence is not noticed by either the child or the parent and could lead the health preservation of this tooth. Permanent molars are predisposed to caries due to anatomical features, presence of their pits and fissures and need close sanitary care. The focus of our study is the correlation of the condition of temporary teeth and their impact on the early development of caries of permanent teeth. A sample of 250 children aged 7- 8 years with mixed dentition were examined. It was observed that in those children who had decays in the temporary teeth, especially in the temporary molars, the prevalence of decays in the permanent teeth-first permanent molars was also high. The mean value of the dmft index for children for primary dentition was 6.7. Statistically significant relation was found between this value of dmft and caries lesion in first permanent molar. In the cases where decays were treated on early age in the temporary teeth, it was found that the condition of the permanent molar is apparently better due to the awareness of the patient and the parent. Based on the findings this group of children were aware of the importance of temporary dentition on development of permanent dentition, oral health and their general health.

**Key words:** temporary teeth, permanent teeth, first permanent molar, decay, awareness, oral hygiene

# The impact of smoking on microbiome of dental biofilm and periodontium

Davor Kuiš

**Abstract.** Smoking is proven to have a devastating influence on several aspects of periodontal health and periodontitis. Smoking causes changes in periodontal tissues, interferes with dental biofilm formation, modifies and weakens immune host response – affecting both progression of the disease, as well as healing after periodontal treatment. This influence has also a great clinical relevance – in recent Classification of periodontal and periimplant diseases and conditions from 2017., smoking, as a risk factor for periodontitis, is considered modifying factor of the Grade of periodontitis (rate of progression: from mild to moderate or from moderate to rapid). Furthermore, Guideline on treatment of periodontitis (published in 2020.) includes smoking cessation in the first step of therapy, as well as in supportive periodontal care. Nowadays, there are new and different ways of consuming tobacco and nicotine products besides conventional cigarette smoking - electric cigarettes and Tobacco heating systems (THS) which produce aerosol with nicotine. It is estimated that such aerosol contains less harmful products than conventional cigarette smoke, however the influence of the aerosol has not been investigated in vivo in oral cavity. National Grant (Croatian Science Foundation) supports an investigation “Environmental factors and microbiological interactions in the structure of dental biofilm” on the Faculty of Dental Medicine University of Rijeka, Croatia. Clinical study is aimed to research the impact of smoking, and also THS, on bacteria of supragingival and subgingival dental biofilm, oral mucosa, teeth and periodontal tissues and to what extent smoking modifies therapeutical protocols.

# ORTHODONTIC AND ORAL SURGERY APPROACH IN CASES OF SUPERNUMERARY TEETH

Dimova Cena<sup>1</sup>, Trpevska Vesna<sup>1</sup>, Evrosimovska Biljana<sup>2</sup>, Naskova Sanja<sup>1</sup>, Azizi Fadilj<sup>1</sup>

<sup>1</sup>Goce Delcev University, Faculty of Medical Science, Stip, North Macedonia

<sup>2</sup>University "Sts. Cyril and Methodi", Faculty of Dentistry, Skopje, North Macedonia

**Abstract.** Hyperdontia is an anomaly in the number of individual teeth and is manifested by a greater number of teeth in the jawbones than the normal number. Supernumerary teeth can occur in both generations of teeth, with more frequent representation in the permanent. Two forms of supernumerary teeth can be observed, typical and atypical. Typical supernumerary teeth are very similar in shape to normal teeth (dentes supernumeraria), while atypical supernumerary teeth are usually pointed in shape (dentes accessoria).

**Aim:** The purpose of this lecture is to present the etiopathogenesis, clinical examination, diagnosis, and differential diagnosis, as well as the prognosis, therapeutic treatment, and clinical outcome of supernumerary teeth.

**Material and Method:** The paper will present several clinical cases from its own casuistry, emphasizing the indications and contraindications for operative oral-surgical therapeutic treatment, emphasizing the criteria, conditions and factors that are of great importance in the definitive solution of supernumerary teeth.

**Results:** There are different data on the representation of supernumerary teeth in both the deciduous and permanent teeth. Only those statistical analyzes that are based on clinical and radiological examinations during the primary and permanent dentition of each subject should be considered reliable.

**Conclusion:** In addition to interdisciplinary cooperation, for the realization of oral-surgical interventions, the correct assessment of the expediency and determination of the most suitable time for treatment is of great importance.

**Keywords:** Robot, Object, Body, Surgery, Environment

# PREMATURE LOSS OF PRIMARY TEETH AND THEIR PERSISTENCE AS A CAUSE OF ORTHODONTIC ANOMALIES

Prof. Dr. Ass. Agim Prokshaj<sup>1</sup>, Dr. Arber Prokshaj<sup>2</sup>, Dr. Shpetim Prokshaj<sup>2</sup>

<sup>1</sup> UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n. Prishtine, Kosovo, Faculty of Dentistry

<sup>2</sup> Dental Clinic “PRODENT”

**Abstract.** Primary teeth, except of their chewing and speaking function, they also have a protection role against orthodontic anomalies.

Early caries in primary teeth is the main cause for their premature loss, which leads in disruption of the normal placement of permanent teeth, a phenomenon which is quite pronounced based on many scientific researches.

Persistence of primary teeth, often as a result of their irregular resorption by permanent teeth, is manifested by hindering the development of permanent teeth.

In this paper, several cases of orthodontic anomalies are presented as a cause of premature loss of primary teeth and their persistence, with consequences: total lack of space for the development of permanent teeth, infection of the permanent tooth follicle as a cause of the progression of deep caries on primary teeth, the disorder in the resorption of the deciduous teeth roots and the complete bone coverage of the permanent follicle, the interruption of the permanent teeth development, the deviation of the permanent tooth path development, etc.

Based on the literature and clinical cases, we can conclude that with the prevention of caries on primary teeth from their eruption, in terms of taking care by avoiding their premature loss, orthodontic anomalies can obviously be prevented.

**Keywords:** primary teeth, caries, persistence, prophylaxis, orthodontic anomalies

# Osteochondroma of Temporomandibular joint- Case Report

Sinan Rusinovci

University of Business and Technology (UBT) - Department of Dentistry-Prishtina. R. of Kosovo

**Abstract.** Osteochondromas are one of the most common benign tumours of bone, representing approximately 35% to 50% of all benign tumours and 8% to 15% of all primary bone tumours. These tumours are rare in the craniofacial region (0.6%) [1], with the coronoid process of the mandible and the mandibular condyle as the most common sites of occurrence. Osteochondroma (OC) is defined as an osteo-cartilagenous exostosis with cartilage capped exophytic lesion that arises from the bone cortex. It is one of the most common benign tumor of the axial skeleton, but is rarely associated with the facial bones. It has been described in the head, cranial base, jaw, maxillary sinuses, condyle, ramus, body, coronoid process and symphyseal mandibular region.

Case description: A 30 years old man referred to Department of Maxillofacial Surgery of University Clinical Center of Kosova. His complains were limited movements of jaw in opening. The right side has reduced TMJ movements and during the opening we noticed the the lower jaw move in the left side because of the tumor is in the head of the lower jaw in the same side, facial asymmetry with approximately 7 mm deviation of the midline to the left side, severe malocclusion and 20 mm mouth opening. He had the difficulties in swallowing and he take just fluid meals. These complains he had since 2.5 years and every time became worse. The clinical examination revealed tender bony hard oval swelling on right TMJ measuring around 2 cm × 2 cm. After the clinical, laboratory and radiological preparations, the surgical intervention is planned according to Alkayat Bramley.

**Keywords:** Osteochondroma, temporomandibular joint, ankylosis, maxillofacial Surgery.

# The advantages of AntiVegf - Beovu injections in the treatment of age-related macular degeneration - AMD

Dr. Arsim Hajdari PhD<sup>1</sup>; Prof.dr. Nevenka Velichkova<sup>2</sup>; MSc.Ardiana Hajdari PhD<sup>1</sup>

<sup>1</sup>UBT-Higher Education Institution, Faculty of Medical Sciences, Lagjja Kalabria, p.n. 410000 Prishtine, Kosovo

<sup>2</sup>Faculty of Medical Sciences, "Goce Delcev" University – Stip, North Macedonia

arsim.hajdari@ubt-uni.net  
nevenka.velickova@ugd.edu.mk

**Abstract. Introduction:** Age-related macular degeneration (AMD) is the most common cause of blindness in developed countries. Neovascular (ie, wet) AMD is currently managed with intravitreal therapy. Traditional treatments (eg, bevacizumab, ranibizumab, aflibercept) provide highly effective therapy but may also require frequent dosing.

**Purpose:** Continuous treatment and long-term chronic monitoring is a heavy economic and social burden on the patient, therefore the purpose is to evaluate what are the advantages of AntiVegf-Beovu injections.

**Methodology:** The research was done on 75 patients with AMD, average age 75 years, during 4 months at the Italian Eye Hospital in Pristina, Kosovo.

**Conclusions:** A large number of studies have shown high efficacy and safety for the advantages of AntiVegf-Beovu injections.

**Keyword:** AntiVegf injections - Beovu, treatment of age-related macular degeneration - AMD, clinical trials



# Application of the Real-Time PCR method in the detection of periodontal pathogens in patients with fixed prosthetic appliances

Enis Veseli

Department of Prosthodontics, Dental School, Faculty of Medicine, University of Pristina,  
Pristina, Kosovo

**Abstract.** Fixed Prosthetic Appliances-Bridges (FPA-B) are dental restorations that are used to replace missing teeth by attaching them to abutment teeth or dental implants. On the other hand, over time, FPA-B can be associated with damage to the periodontium, which plays an important role in the longevity and aesthetic appearance of dental restorations. Important factors in the damage of the periodontium are periodontal pathogens, which affect the development of periodontitis. Thus, the purpose of this review paper is to provide an overview of the oral microflora detected using the Real-Time PCR (RT-PCR) method in patients treated with FPA-B depending on the method used in the construction of the prosthetic appliances.

An electronic search was conducted on the MEDLINE/PubMed database, and Google Scholar using certain combinations of keywords related to the topic. Inclusion criteria were English-language publications reporting on microbiological analysis, namely on the level of periodontal pathogens by RT-PCR method in patients with FPA-B, constructed from zircon material by CAD/CAM technology, and FPA-B conventionally constructed from metal ceramics.

Data from the reviewed literature show that zirconia-based FPA-Bs produced by the CAD/CAM method provide better microbiological results compared to metal-ceramic restorations completed by the conventional method.

**Keywords:** Bridges, Real-Time PCR, CAD/CAM, periodontal pathogens, zirconia, metal-ceramics

# Assessing prevalence of signs and symptoms of temporomandibular disorders among dental students using Fonseca's questionnaire

Katerina Zlatanovska\*, Afrim Shehapi

Faculty of Medical Sciences, Goce Delcev University, Stip, North Macedonia

Corresponding author: katerina.zlatanovska@ugd.edu.mk

**Abstract. Aim:** Temporomandibular Disorders (TMDs) are very frequent and the most common condition that affects the temporomandibular joint harming individuals' quality of life. The etiology of temporomandibular disorders is multifactorial. The aim of this study was to evaluate the prevalence and association between stress and TMDs in dental students in Macedonia.

**Material and methods:** The research was conducted on 95 dental students using Fonseca's questionnaire to measure the prevalence and to identify the severity of symptoms of temporomandibular disorders along with their clinical examinations. The results were scored and estimated in the specified population. The group consisted of 40 men and 55 women and were divided in two groups: Group 1 consisted of 60 and Group 2 of 35 students. The data analyses were based on the respondents in the questionnaires and calculated using Statistical software SPSS for Windows version 23.

**Results:** Results of this study showed that the prevalence of TMD was 57,89% accordingly of them 45,26% with mild TMD, 10,52% moderate and 5,26% severe TMD. According to the answers, the symptoms were more prevalent in women, with 63,63%. Some level of TMD was registered in men with 36,36%. The most common etiological factors were psychological stress (31,57%) and malocclusion (18,94%). Clicking sound was found in 10,52% of the students.

**Conclusion:** Stress was associated with individuals with a higher prevalence of temporomandibular dysfunction. This study highlights the importance of prevention and early diagnosis as key factors for successful management of TMD among dental students.

**Keywords:** dental students, Fonseca's questionnaire, stress, temporomandibular disorder.

# BENEFITS FROM DENTAL LASERS IN PERIODONTAL TREATMENT

Mihajlo Petrovski

Faculty of medical sciences, Goce Delcev University, Stip, North Macedonia

mihajlo.petrovski@ugd.edu.mk

**Abstract.** To overcome the numerous limitations of curettes and ultrasound devices during periodontal therapy, many researchers have investigated the effects of lasers as an adjunct or alternative to conventional mechanical periodontal therapy. Lasers are one of the most promising modalities for non-surgical periodontal treatment, as they can achieve excellent tissue ablation with strong antimicrobial effects and root surface detoxification. Starting from the abovementioned, we set the main goal of this research - to present the benefits and advantages from dental lasers in periodontal treatment.

This article presents an adequate literature review for the contemporary aspects of laser assisted periodontal therapy. All of the used literature data were published in peer-reviewed publications and journals. Most of the articles were in English language, published in the last ten years from 2013 until 2023.

Various types of lasers can be used in periodontology, including Carbon Dioxide laser (CO<sub>2</sub> laser), Neodymium: Yttrium Aluminum Garnet laser (Nd: YAG laser), Erbium: Yttrium Aluminum Garnet laser (Er: YAG) and Erbium Chromium: Yttrium Scandium Gallium Garnet laser (Er, Cr: YSGG). Most often, lasers containing the YAG group are more suitable in periodontology, due to their high absorption by water and hydroxyapatite, which is the highest compared to other wavelengths.

Evidence shows that the laser provides better clinical and microbiological results compared to the use of hand instruments and sonic and ultrasound instruments and devices.

**Keywords:** Dental lasers, periodontology, periodontal treatment, Er: YAG laser in periodontology.

# Prosthodontic dental material modification for better treatment of oral infection

Teuta Komoni, Arta Gjikolli Loxha

Faculty of Dentistry, Department of Prosthodontics, University for Business and Technology- UBT,  
Prishtina, Kosovo

**Abstract.** Microbial infections play a major role in causing infection of the oral cavity. This is a common etiological factor that causes the denture-related stomatitis. Tissue conditioners are prosthodontic materials that are used materials for the correction of denture faults to help for tissue healing process and are usually the source of fungal infection adherence and colonization. These materials are also considered to be an additional source of microbial infection. Therefore, despite the the current treatment approaches for fungal infection continuing to rise, there are also increasing rates of microbiological resistance, and new antifungal substances are being considered as an important tool to overcome this challenge. Moreover, the modification of such materials with the incorporation of antimicrobial drugs and novel substances in prosthodontic materials such as tissue conditioners is currently being demonstrated as a new novel approach. Therefore, in this minireview, we have summarized some studies related to the modification of such materials for better treatment outcomes.

# Effectiveness of treatment of impaired orofacial functions and appearance

Stjepan Spalj

**Abstract.** Dentofacial deformities often contribute to aesthetic problems, social discomfort, difficulties in chewing, swallowing and speaking, but it is doubtful how much the deformity affects self-confidence and self-esteem. Skeletal malocclusions often cannot be corrected by the orthodontist alone, so combined treatment with a maxillofacial surgeon is required. Through the lecture, the possibilities and limitations of orthodontic treatment for skeletal malocclusions and the patient's perspective on functioning with dentofacial deformities will be presented, and the reasons why some patients refuse the proposed surgery will be analyzed. The outcome of the treatment will be discussed from the perspective of the clinician and the patient. Experiences and research results of the Dental Clinic of the University of Rijeka team will be presented.

# **Fabrication of upper complete denture combining dental base materials to cover torus palatinus - Case report**

Vlora Berisha

UBT – Higher Education Institution, Faculty of Dentistry, Prosthodontics Department,  
Kosovo

vlora.berisha@ubt-uni.net

**Abstract.** Torus palatinus provides a challenge when restoring an edentulous arch. Because the mucosa is often quite thin, tori may be sensitive to the pressure that comes from a denture basis. A strong palatal seal is prevented by the tori's propensity for having deep undercuts that occasionally extend to the junction with the soft palate.

Case Report: A 70-year-old edentulous female came to our dental clinic, with a chief complaint of the instability of her maxillary complete dentures, and she requested new denture. The patient had been wearing the dentures for approximately 2 years. Based on the intraoral examination, the patient had a large, unilobular diffuse torus palatinus. It was covered with thin mucosal tissue, and it did not interfere with her speech, her ability to chew, or other oral functions without the dentures. After the problems were thoroughly diagnosed, thermoplastic complete denture was chosen as the appropriate solution for this case. Dual lamination involves combining 2 materials to fabricate a denture base that utilizes the retentive aspects of the torus. The thermoplastic flange provides a measure of flexibility, allowing the denture to seat over the torus and the support for the denture teeth. The resilient liner provides a cushion to diffuse the occlusal load. Using this approach, a very retentive denture was fabricated using torus palatinus as a key element in anchoring the denture.

**Keywords:** Complete denture, thermoplastic denture, torus palatinus

# Oral Habits of Patients as Indicators of Occlusal Dysfunction: A Comprehensive Review

Dugagjin Sokoli, Burim Kiseri, Genc Demjaha, Vlora Berisha, Teuta Komoni,  
Arta Gjikolli

UBT – Higher Education Institution, Faculty of Dentistry, Prosthodontics Department, Kosovo

dugagjin.sokoli@ubt-uni.net

**Abstract.** This research paper provides a comprehensive discussion on the pivotal role of patient habits as indicators of occlusal dysfunction. The reviewed resources collectively underscore the significance of habits such as bruxism, dietary choices, oral piercings, stress-induced behaviors, and tongue thrusting influencing occlusion and oral health. Understanding the intricate interplay between these habits and occlusal function is vital for early diagnosis, prevention, and effective management of occlusal problems.

The findings strongly advocate for proactive measures in recognizing and addressing these habits, as they can have far-reaching consequences on oral health and occlusion. Early diagnosis and tailored interventions are emphasized as essential components of preserving occlusal health in individuals prone to bruxism behaviors. Moreover, the critical review by Manfredini et al. (2003) challenges clinicians to adopt a multidisciplinary approach in addressing occlusal issues within the realm of clinical practice. Additionally, the exploration of the effects of tongue piercings by Kieser et al. (2010) serves as a reminder that patient choices, while expressions of style, can bring about tangible consequences for dental health and function. This research paper provides valuable insights into the multifaceted relationship between patient habits and occlusal dysfunction, emphasizing the importance of recognizing and addressing these habits to enhance the quality of oral care and promote optimal occlusal health. Further research is encouraged to deepen our understanding of this complex interplay.

**Keywords:** Oral habits, occlusal dysfunction, bruxism, orofacial pain, tongue thrusting, dental erosion

# INITIAL STUDY ON QUALITY OF LIFE AND RISK FACTORS FOR TOOTH WEAR

Kushtrim Dakaj, Julijana Nikolovska

Ss. Cyril and Methodius University of Skopje, Faculty of Dentistry

**Abstract.** Aim: The aim of this study was to gain knowledge about the prevalence of tooth wear in different age population groups, to determine potential risk factors, the extent of dental lesions and the possibility of their prediction, as well as to evaluate their association with the quality of living.

Material and methods: Respondents of both sexes, aged 20-65 years, were included in the research. Tooth wear was determined based on clinical examinations that were conducted at the University Dental Clinical Center, St. Panteleimon Skopje and registered using the BEWE index. Respondents filled out questionnaires which, in addition to demographic data, also contained nine questions related to basic awareness of tooth wear damage, hygienic dietary habits, the presence of possible digestive disorders and bruxism. They also answered questions from the OHIP-MAC14 instrument. Statistical analysis was done using the statistical package SPSS 26, using the following statistical tests: descriptive analysis, chi-square test, one-way analysis of variance and post-hoc test and binomial regression.

Results: The highest degree of BEWE3 impairment is most prevalent in the oldest age group (36), and the most patients with BEWE2 impairments are identified, significantly more in women than in men in the oldest age category. The oldest category of respondents visits the dentist the least often, and they are dominated by maintaining oral hygiene twice a day. The majority of patients with second- and third-degree damage use a hard toothbrush.

Conclusion: The intermediate degree of impairment (BEWE2) can be predicted based on two factors (age and reported bruxism), while the highest degree of impairment (BEWE3) can be predicted based on reported bruxism and hard brush use. Both categories cannot be predicted based on reflux, dietary habits, and gender. People with BEWE3 from the age category 50-65 have the lowest level of well-being, while people from the youngest age category, with BEWE1, have the best.

**Keywords:** non-carious dental damage, risk factors, quality of life, public health in



## **‘Oral Surgery in patients on antiplatelet or anticoagulant therapy’**

Prof. Dr. Mirsad Shkreta, Dr. Vullnet Fazliu, Dr. Agron Dushi

**Abstract.** Surgical-oral treatments in patients who are under antiplatelet or anticoagulant therapy present a special challenge due to eventual complications of bleeding or thromboembolic attacks.

The focus of this paper will be the review of the literature on preoperative preparation protocols, the management of these cases depending on the type of surgical procedure, the general condition of the patient, the interference of different therapies that can increase the risk of thromboembolic attacks or bleeding in cases where we have to modify the existing therapy before oral surgical interventions, the type of therapy in which the patients are depending on the general cardiovascular diseases that are being treated and the postoperative surgical-oral management in patients under antiplatelet or anticoagulant therapy.

**Keywords:** oral surgery, antiplatelet therapy, anticoagulant therapy, bleeding, platelet embolism

# The use of implants for ear prosthesis. Bringing back hope and smiles

Genc Demjaha<sup>1</sup>, Arbër Bajgora<sup>2</sup>

<sup>1</sup>UBT – Institution of Higher Education, Faculty of Dentistry, Department of Dental Prosthetics,  
Pristina, Kosovo

<sup>2</sup>UBT – Institution of Higher Education, Faculty of Dentistry, Pristina, Kosovo

ab44698@ubt-uni.net, bajgoraarber275@gmail.com

**Abstract.** Maxillofacial prosthetics is an ever-evolving branch of patient compliance in restoring and rehabilitating craniofacial defects and problems. Craniofacial defects include a large proportion of newborns with one or a combination of different defects. It is known that the causes of facial tissue loss are often congenital malformations, tumoral lesions or accidents. Facial defects can cause not only functional problems, but also some serious psychological problems that can make the individual avoid social contact. With this in mind, the first goal of maxillofacial rehabilitation should be to solve aesthetic problems. The loss of any facial structure is associated with psychological impact that compromises an individual's self-confidence. The outer ear is an integral part of the face and the loss of any part of the ear structure in an individual changes their overall aesthetics and appearance, thus affecting their mental status. The absence of an ear results in an appearance asymmetric, distorted, which may not affect the function to a large extent, but the psychological state and self-esteem of the patient are deeply affected. Data were researched using online information in Researchgate, Pubmed, and ScienceDirect, analyzing articles and books written and students' books. Of the 60 articles analyzed, 21 articles were included in the writing of this review article. Implant-supported ear prostheses offer numerous advantages to the patient: they provide comfort, provide security, easy to wear and stable positioning, and eliminate the need for adhesives to hold the prosthesis.

# Using PRF in Implant Dentistry

Özgür Öztürk

**Abstract.** Implant supported dental restorations have become a major option in the treatment of edentulous alveolar ridge for the past several decades. A fundamental prerequisite for successful implant treatments is the adequate volume of hard and soft tissue. Today, one of the most critical topics in oral implantology is the repair of lost alveolar bone and surrounding soft tissue through proliferating bone cells.

One of the latest innovations in oral surgery is the use of platelet concentrates for in vivo tissue engineering applications; Platelet-rich plasma (PRP) and Platelet-rich fibrin (PRF). Platelet concentrates are a concentrated suspension of growth factors found in platelets, which act as bioactive surgical additives that are applied locally to induce wound healing. PRF has several advantages over PRP, including easier preparation and not requiring chemical manipulation of the blood, which makes it strictly an autologous preparation.

In this sense, platelet rich fibrin (PRF) appears as a natural and satisfactory alternative with favorable results and low risks. PRF alone or in combination with other biomaterials seems to have several advantages and indications for implant dentistry, due it is minimally invasiveness with low risks and satisfactory clinical results.

As alternative to titanium mesh or block bone procedure, sticky bone was introduced in 2010 by Sohn et al. Sticky bone is biologically solidified bone graft which is entrapped in fibrin network and is easy to make, very effective material for the reconstruction of alveolar bone defects, based on the concept of minimally invasiveness on ridge augmentation.

The presentation attempts to summarize different techniques of using PRF and Sticky Bone, focusing on its preparation, advantages and of using it in different clinical scenarios.

# Oral health in patients with chronic renal failure

Asllani L.1, Minovska A.2, Petrovski M.3, Barani M.4

<sup>1</sup> Faculty of dentistry of UBT, Prishtine, Kosova

PhD candidate, Faculty of medical sciences, Goce Delcev University, Stip, North Macedonia

<sup>2</sup>Eternadent, Skopje, North Macedonia

<sup>3</sup> Faculty of medical sciences, Goce Delcev University, Stip, North Macedonia<sup>4</sup> Faculty of dentistry of UBT, Prishtine, Kosova

**Abstract:** Kidneys are visceral organs that are responsible for numerous body functions. About 90% of patients with kidney failure show oral signs and symptoms on both soft and hard dental tissues, some of them are caused by the disease itself, while others may be caused by the treatment.

The main aim of this paper was to present the oral health changes caused by chronic renal failure.

In order to realize the main aim, an adequate literature review was conducted.

The occurrence of gingival hyperplasia due to immunosuppressive therapy is the most studied oral manifestation. It is estimated that 30% of patients who are on cyclosporine therapy show clinically significant gingival enlargement. Decreased kidney function results in an increase in levels of urea in the blood, and thus an increased level of urea in the saliva, where it is the same converts to ammonia. For this reason, uremic individuals have a characteristic halitosis (uremic fetor), which also occurs in about a third of patients on hemodialysis. Hyposalivation occurs as a result of reduced fluid intake, or as a result of secondary effects of drugs (mainly antihypertensives), as a result of the atrophy of the parenchyma of the small salivary glands or else due to mouth breathing.

The recognition of the basic anatomical and pathological developments of kidneys, as well as the signs and symptoms of their diseases will allow you to avoid numerous complications in everyday practice may occur during dental interventions in such patients.

**Keywords;** Renal failure, chronic renal disease, uremic halitosis, oral changes

# Trajtimi i Klasës III dentoalveolare dhe skeletore-protokoli, plani terapeutik dhe sfidat

Kubati J. Kiseri B, Prekazi M.

**Abstract.** Hyrje: Klasa III skeletore apo Progenia Vera paraqet nje anomali jo vetëm groteskepo të përcjellur me shumë probleme; okluzale, funksionale dhe muskulore. Trajtimi është i gjatëme dominim të ndikimit gjenetik. Sidoqoftë shumë pak pacient pranojnë kombinimin e trajtimit ortodontik dhe kirurgjisë ortognatike në fazën kur ka mundësi të realizohet trajtimi i kombinuar ortognatik.

Qëllimi:

Qëllimi ynë është të paraqesim sfidat gjatë trajtimit shumë problematik në kuptim të kohës dhetë komplikueshmerisë së anomalisë të Klasës III ndaj trajtimit kirurgjik të kombinuar me ortodoncinë fikse.

Metoda e punës:

Subjektet në rritje trajtohen me teknika për stimulimin dhe modifikimin e rritjes së nofullave, siq janë, face mask, Hirax, aparate funksionale dhe teknike fikse. Pacientet e rritur, kalojnë nëpër procedurë të parapërgatitjes ortodontike për kirurgji ortognatike.

Rezultatet:

Në disa raste raporti neutral në okluzion nuk mund të arrihej deri sa mbulimi incisal u arrit mesfidë të madhe. Regjstruam gabimet të cilat u shfaqën me aplikim e llastiqeve. Vërrejtëm përmirsimin në aparencën faciale dhe ndikimin në indet e buta. Buzëqeshja përfitoi në komponentën estetike. Recidivi mbetet qështje e paparashikueshme në nivel dentar dhe muskulor si problem kyq në trajtimin e kësaj anomalie.

Konkludim

Trajtimi i hershëm ordopedik te pacientet e rinj, përmirson okluzionin dhe zbut manifestimin eanomalisë. Përdorimi i gjatë i llastiqeve të klasës III prodhon retroinkimim të tepruar të incizivëve mandibular. Kirurgjia ortognatike te pacientet e rritur, e lehtëson trajtimin e klasës III skeletore duke kontribuar dukshëm në aparencën faciale dhe në përmirsimin e funksionit. Retencioni në dy rastet është me sfida.

# COMPLEX DENTAL TREATMENT - A CASE REPORT

Budima Pejkovska Shahpaska

**Abstract:** Introduction: Patients that are in need for complex dental treatment are a great challenge for both the dentist and dental technician.

Aims: To present the contemporary prosthetic treatment for a challenging patient with multidisciplinary approach.

Materials and Methods: For a young adult patient, orthodontic treatment plan (class Angle II) was performed. Also crown lengthening was achieved for better aesthetic results. After finishing the orthodontic treatment for a period of two years, fixed dental constructions were manufactured.

Results: There is no definite contemporary prosthetic treatment plan that can be suitable for every patient. Sometimes other protocols from different specialties must be involved.

Conclusions: With the treatment protocol provided, the deduction is that the patient must be treated with meticulous attention to details. This includes the pre-prosthetic treatment, so that the dental prosthetic appliance will be suitable and will be designed on the mutual satisfaction of the patient and the multidisciplinary dental team.

**Keywords;** contemporary prosthetics, challenging patient, pre-prosthetic treatment, multidisciplinary approach

# IC-EDUCATION AND DEVELOPMENT

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# **UBT Smart City as a Small Scale Smart Self-Sustaining Innovation-Based Ecosystem: The Platform for Future Education, Research, and Developments Cases: Using AI and XR for Education and Learning Future Skills**

Edmond Hajrizi

UBT-Higher Education Institution, Kosovo

ehajrizi@ubt-uni.net

**Abstract.** Smart Cities are a popular idea to harness innovation and sustainability for the benefit of urban people in an era of rapidly advancing technology and increasing global concerns. Under this concept, the "UBT Smart City" is a trailblazing example of how to turn compact urban settings into innovation-driven centers for learning, research, and development. An overview of the UBT Smart City is given in this abstract, which also highlights the city's function as a self-sufficient hub for forward-thinking projects. Artificial intelligence (AI) and virtual reality (XR) applications are highlighted in particular as ways to improve education and encourage the development of future skills. The University for Business and Technology (UBT) in Kosovo's UBT Smart City project serves as an example of how smart city concepts may be scaled down and used to smaller metropolitan settings. Modern technology, AI-powered systems, and XR solutions are all integrated throughout the city to create a dynamic, adaptable ecology that fosters creativity, sustainability, and education.

**Keywords:** UBT Smart City, AI, Enhanced Education, Future Education, XR, Self-Sustaining Ecosystem



# From Engineering Management EM to Technology Engineering Management TEM

Pete Kopacek PhD and Edmond Hairizi PhD

Technische Universität Wien, and the University for Business and Technology

**Abstract.** The first MSc EM program was realized in Turkey in the year 1994.

The first idea for a postgraduate Engineering Management MSc program at TU Wien came up in 1992 in cooperation with Oakland University in Rochester (MI). The main goal has been to educate managers for SMEs as well as Department Heads of large companies from the producing industry.

After some discussions and visits a general cooperation agreement between Oakland University and TU Wien was signed on January 25, 1995, in the Rectors office of TU Wien. The main points were an international faculty, a two-week stay at Oakland University with lectures and company visits and the participants received an MSc degree in Engineering Management and an Academic record from Oakland University as well as a certificate from TU Wien. On October 20, 1995, the first program was launched with 11 participants in Austria. The following programs up until 2005 took place in different locations in Lower Austria and Vienna. Since 2007 this program has been running in the framework of the Continuing Education Center (CEC) of TU Wien. During these past 26 years, the topics were continuously adapted to incorporate the latest developments in technology and economics. Until now there are more than 220 graduates mostly with a technical background. Nearly, all of them are currently worldwide in higher management positions in the industry or founded their own, successful companies. Usually, the contents of the lectures were adapted according to the latest developments by the members of the international faculty. According to the rapid development of their experience, we recognized that EM has to be changed into TEM.

In 2023 the Engineering Management Program was established in Kosovo at UBT with the name International Engineering Management which was an innovation-based solution for countries in transition and a direct support for capacity building according to best practices in Europe and the USA. This model, an American - European based education was a prototype for the entire development of UBT as a new University.

**Keywords:** Engineering Management, Technology Engineering Management, Agreement

# Digital Challenges in English Language Education

Christopher Allen PhD

Department of Language Linnaeus University Sweden

**Abstract.** This presentation focuses on a number of digital challenges in international English as a foreign language teaching. Against the backdrop of rapid technological change and rising internet connectivity, the 'parent subject' of applied linguistics has moved from a focus on *language-in-place* to *language-on-the-move* in the wake of recent geopolitical change and upheaval. The talk moves on to discuss the challenge of educating digital natives, the difficulties of integrating mobile technologies into the language classroom, and technological inequalities between *Global North* and *Global South*. Finally, a framework- digital literacies- which draw from the work of Pegrum, Hockly and Dudeney (2022) is put forward offering the prospect of integrating technology with the longstanding goals of language education.

**Reference:** Pegrum, M., Hockly, N. and Dudeney, G. (2022) *Digital Literacies 2<sup>nd</sup> ed* Routledge

# Exploring the Challenges of Blended Learning Among Students in Pakistani University

Zohaib Hassan Sain

Superior University, Raiwind Road Lahore, Pakistan

zohaib3746@gmail.com

**Abstract.** The aim of this study was to examine the standpoints of BS 4 years program (BSCS) students in Pakistani universities regarding the issues and challenges they face. The study utilized a descriptive survey method with a quantitative approach to quantify and measure students' perceptions and issues related to blended learning in education. The study collected data from 219 students out of 482 enrolled in the BS 4-year program (BSCS) at three public universities in Pakistan in the 2022 academic year. A questionnaire with a three-point Likert scale was used to gather data, which was then analyzed using frequencies, percentages, and diagrams. The findings showed that most students had a positive view of blended learning, but they also encountered various issues, such as lack of time, insufficient skills and support for proper use, lack of training, and unavailability of Learning Management Software (LMS) for technological learning tools. The study suggests the need for the development of institutional policies for the effective use of blended learning in universities and the implementation of training and skill development programs for teachers to integrate technology into their teaching.

**Keywords:** Blended Learning, Challenges, Standpoints, Teacher Education.

# How Often Did He Ring? The (Many) Film Versions Of James M. Cain's *The Postman Always Rings Twice*

Lothar Tschapka

University of Vienna, Austria

lothar.tschapka@univie.ac.at

**Abstract.** The American James M. Cain (1892-1977) was among those authors who not only wrote best-selling novels, but gained even more popularity from the film versions of their works. Other such writers include Ian Fleming, inventor of *James Bond*, and, more recently, J. K. Rowling, who created the *Harry Potter* series. Through his books, Cain inspired such cinema classics as Visconti's *Ossessione* (1943), Wilder's *Double Indemnity* (1944), and Curtiz's *Mildred Pierce* (1945), as well as the Mario Lanza film *Serenade* (1956).

Cain's first novel, *The Postman Always Rings Twice* (1934), was adapted for the screen no less than seven times, in six languages ranging from English, French and Italian to Hungarian, German and Malaysian. This paper is the first to compare all versions, placing special emphasis on the two main characters' first encounter as well as on the films' endings, while also providing a glimpse of several other cinematic works inspired by Cain's *Postman* story.

**Keywords:** Hard-boiled fiction, Film noir, Femme fatale, Neo-realism

# Women in Victorian Novels Jane Eyre and Wuthering Heights

Anjeza Krasniqi, Nora Suhodolli, Festina Vranja, Halil Bashota

Faculty of English Language, UBT College, Prishtina, Kosova

**Abstract.** The Victorian era was named after the reign of “Queen Victoria” from 1837 until 1901. It was a chaotic yet fascinating era for Britain. The nation was rich in culture, literature, art, and music. The century saw unprecedented changes in the conditions of women's lives as well as the consolidation of a powerful female literary tradition. Herein this paper delves into the insights of the two iconic novels of Victorian time, Jane Eyre and Wuthering Hights, by analyzing the roles, characteristics and societal changes faced by the female protagonist Jane Eyre and Catherine Earnshaw. Despite these extensive and varied developments, they were denied numerous rights since they lived in a patriarchal culture where males were granted all rights and a woman's place after marriage was at home. The two sexes now inhabited what Victorians thought of as ‘separate spheres’, only coming together at breakfast and again at dinner. The upper-class women belonged at home near their husbands and kids. Women were seen as an object of joy and sex and someone who should satisfy men. Women were mainly categorized as being moral and faithful married partners, staying home, or ending up in the streets as a prostitute to please someone else’s needs. For most women during this era, marriage was an avoidable option whether they wanted it or not. In addition, in this period, the rights of married women, their property, and even their identity almost ceased to exist by law; she was under the complete and total supervision of her husband, and through the marriage, husband and wife became one person whatever view he presented was the unquestionable truth.

**Keywords:** feminism, gender roles, social constraints, self-independence, female identity

# Introducing Corpus Linguistics as a Novelty To English Teachers And Learners: Current Language Practices Of Tools, Corpora, And Online Resources

Dr. Juliana Çyfeku

“Fan S. Noli” University, Department of Education and Philology  
Department of Foreign Languages  
Korce, Albania

jcyfeku@unkorce.edu.al

**Abstract.** The present paper represents how Corpus Linguistics has developed and is employed as a methodology in foreign language teaching and learning. It highlights its many relevant, innovative, creative, and engaging applications to both axes of the linear process of teaching and learning. It bridges theory into practice so that learners understand the importance of this discipline and are willing to apply corpus-based tools in the language-learning classroom. It introduces among a range of online resources Compleat Lextutor (Cobb, 2000) pointing out the most practical, dynamic, easy-to-use, and accessible tools such as concordance, hypertext, frequency, and vocab profile. They can be utilized either in a computer lab or out of class and are intended for a range of learners.

Provided the flexibility of the corpus-based approach students can autonomously use the databases and choose among the tools in dependency to their proficiency level. They can explore, generate, or design materials, tasks, and activities that can eventually inform or guide toward Data-Driven Learning (DDL) on the web and consequently yield reinforcing vocabulary. Moreover, the present work paper conceptualizes the corpus-approach dissemination accomplished under the language educator’s instructional guidance with a mere focus on student learner-oriented autonomous conduct. Alongside, they are addressed to exploit the numerous site’s video tutorials; utilize the selected tool/s in understanding the authentic language use as displayed in corpora lines; explore and address linguistic patterns of use, grammatical co-occurrence patterns so that gain consistency of native-like use of the genuine patterns of language use.

**Keywords:** Corpus Linguistics, corpus, tools (concordance, hypertext, frequency, vocab profile), online resources (Compleat Lextutor, Cobb 2000), DDL.

# Investigating the Language of Tourism: A Case Study of Tourism Discourse in Albanian Websites

Eriola Qafzezi PhD [0000-0003-3874-8359]

Department of Education and Philology, Fan S. Noli University, Korça, Albania

eqafzezi@unkorce.edu.al

**Abstract.** This study aims to provide some insights into the language of tourism discourse in Albanian websites. We start the paper by providing some relevant literature reviews on tourism discourse and the language of promotion. The paper is composed of two parts: in the first part we build a relevant literature review framework based on research on tourism discourse and then we highlight distinctive features of the persuasive language of tourism discourse. The second part of the paper brings concrete examples to support the theoretical framework, taken from Albanian tourist websites. The findings of the study point out that some of the linguistic strategies used to promote tourism in Albania are: the frequent use of adjectives in the superlative degree, key phrases, imperatives, and poetic language. Further extension of the study is predicted to relate the current investigation of tourism discourse analysis to the translation of tourism discourse in order to investigate the complementary role of translation on intercultural understanding and shared values via tourism promotion.

**Keywords:** Tourism, Discourse, Promotion, Albanian, Language, Websites.

# Exploring Productive Use of Educational Games in Teaching English as a Foreign Language

Alma V. Lama PhD, Deniz Çelçima PhD, Vesa Rudari Student; Nora Suhodolli – Student

Department of English Language, UBT College, Prishtina, Kosova

[www.ubt-uni.net](http://www.ubt-uni.net)

**ABSTRACT.** Educational games significantly support classroom learning and promote social interaction among peers. Research studies clearly show that the use of games is a basic strategy in language education, in order to include all students regardless of their language level. According to Gartner, games play a special role in a child's development because they push the child to discover his motor and thinking skills. The role of games in foreign language learning is also related to the theory of multiple intelligences presented by Gartner. The game in the classroom brings fun and makes learning more useful for all students, relieves stress, and plays an important role in the implementation of inclusiveness. This research explains some examples of educational games in English language learning as well as sheds light on some essential elements that educational games should have that teachers can implement in an inclusive classroom.

**Keywords:** English language learning, effectiveness of games, educational games, ELT, ELL



# Factors Affecting Acquisition Of Prepositions By Albanian EFL Learners

Adelina Ramadani Aqifi

ar18115@seeu.edu.mk

**Abstract.** Learning a foreign language is a difficult process, as there are many distinctive language parts that vary from the first language. The target language contains many elements that cause a lot of challenges for learners to acquire and use in everyday life, such as vocabulary, spelling, and grammar. In this case, grammar plays an important role in the language because learners find it challenging to learn grammar skills and use them correctly. As it is known, there are some grammar parts that are very complicated to understand and learn because learners relate the target language to their first language, especially when they acquire prepositions. There are cases when learners are not able to comprehend prepositions and their meaning in English, and most of the time; they make mistakes in the language process. They are not aware of the fact that prepositions in the foreign language are sometimes totally distinctive in comparison with their mother tongue, as they differ in meaning and usage. The study seeks to explore the factors that impact the proper acquisition of prepositions in English, examining what these factors are, and how they influence the process. The research instrument that is used in this study is a post-test, and the research was conducted in three different high schools in Kumanova, with Albanian EFL learners. The test results show that Albanian learners have difficulties acquiring prepositions in the target language and using prepositions properly.

**Keywords:** prepositions, SLA, acquisition factors, ESL students, teachers

# Reviving the Aromanian Dialect Spoken in Korce Area, Albania

Daniela Carmen Stoica, Ph.D.

Department of Foreign Languages, 'Fan S. Noli' University of Korce

dstoica@unkorce.edu.al

**Abstract.** The present article aims to bring to academics' attention the less-known tradition of teaching and learning the Aromanian dialect in the schools of Albania throughout history, as well as the more recent reviving programs that have benefitted from increasingly innovative trends in teaching this endangered dialect. Its revitalization is a must, particularly in the context of granting linguistic rights to the Aromanian minority living in Albania, as stipulated by *Law 96/2017 for Minorities*. Based on the author's own pedagogical experience and her participation in such reviving programs, in the second part, the article will present several innovative trends that have emerged during the process.

Community-based language learning, which has involved the incorporation of the local community and culture into the learning process. Language learners have interacted with native speakers, have participated in community events, and have used the language in real-life settings, fostering authentic language use and cultural understanding.

Integration of culture and history. Teaching the culture and history associated with the minority language has enhanced learners' understanding and appreciation of the language's significance. Integrating cultural elements into language lessons has made learning more meaningful and memorable.

Online language communities: Social media have facilitated the creation of virtual language communities. Minority language speakers and learners connected with each other, shared resources, and engaged in language practice even if they were geographically distant.

**Keywords:** Aromanian, revitalization, innovation, reviving programs

# Exploring the Richness of English Idioms with Numbers

Dr. Suela Koça

Department of Foreign Languages, Department of Education and Philology University “Fan S. Noli” Korçë, Albania

suelapici@yahoo.com  
spici@unkorce.edu.al

**Abstract.** Idioms are a fascinating aspect of language, offering unique insights into cultural nuances and the figurative nature of communication. This article delves into a specific category of idioms: those containing numbers. By examining the usage and origins of idiomatic expressions featuring numbers, this study aims to shed light on the linguistic and cultural significance of numerical references in English.

Drawing upon a comprehensive collection of idioms, the article presents a diverse range of numerical idiomatic expressions. It explores their meanings, providing examples to illustrate their usage in different contexts. It also explores their structure and their syntactic roles in different examples. The research investigates the figurative interpretations associated with numbers, uncovering the underlying symbolism and metaphorical associations embedded within these expressions.

Furthermore, the article delves into the cultural and historical origins of selected idioms, tracing their roots and evolutions over time. It explores how numerical idioms have permeated various domains, including literature, popular culture, and everyday conversations. Through this exploration, the article highlights the enduring relevance and impact of numerical idioms on contemporary language use.

By analyzing the semantic and pragmatic dimensions of numerical idioms, this article contributes to a deeper understanding of the intricate interplay between language, culture, and cognition. It underscores the richness and complexity of idiomatic expressions in English and offers valuable insights for language learners, educators, and researchers interested in the study of idioms and figurative language.

**Keywords:** number idioms, English, linguistic, cultural significance

# Mathematics Unplugged and Digitized: Bridging Traditional and Tech-Driven Approaches

Duli Pillana

Math teacher at Jose Marti STEM Academy, Union City, New Jersey

**Abstract.** The paper starts with analyzing a real-world example that was given as a project in algebra class to apply the piecewise functions in the Giant's Devil's Flower Mantis (two spiked grasping fore-legs), and reviewing literature on combining technology in education. Digital technology graphs the parabola within the insect and adjusts the critical points based on the error and trial (for the parabola). Also, the technology accurately graphs the linear equations representing the antenna of the insect by connecting two points. Technological tools (desmos - graphing calculator) determine the piecewise functions that describe the upper body of the insect that is depicted in Igor Siwanowicz's photography. In the same figure is applied analytical work to verify the results of the technology, in addition, the analytical work confirms the same result with the tenth point decimal accuracy. Combining the work of technology and critical thinking proves that combining teaching mathematics with and without technology increases the impact of the instructions and elevates the learning outcome of high school students. Moreover, the paper applies inductive analytical research by analyzing the effect of combining teaching with and without technology through reviewing literature. Consequently, the literature confirms the students prefer classes with moderate IT to the other four different options. Above all, the paper brings the evidence that combining teaching with and without technology advances instructions to a level where teachers and students can create conjectures, respectively theorems.

**Key Words:** Technology, Critical Thinking, Rationally, Combining, Instruction, Learning, Students

# The Impact of Media On Speech Fluency In Pre-Schoolers

Vlera Salihaj\*, Albion Salihaj

Kolegji Heimerer, Veranda D4, Hyrja C dhe D Lagja Kalabri, 10000 Prishtinë, Republika e Kosovës  
Fakulteti Mjeksisë, Universiteti Hasan Prishtina Prishtine Republika e Kosove

[svlerasalihaj@gmail.com](mailto:svlerasalihaj@gmail.com)  
[\\_albionsalihaj@gmail.com](mailto:_albionsalihaj@gmail.com)

**Abstract** – With the development of technology, the dynamics of life have also changed. These changes have also been reflected in the development of children's skills for fair communication. In this context, the style has also changed life, and as a consequence among the new generations, the problem of correct expression is increasing, catching syllables, their pronunciation, stuttering, articulation of thought, and correct expression, are just some of the problems faced by a large number of children of preschool and school age. In this paper, our main objective has been the influence of the media on the fluency of speech in preschoolers. The study is focused on children of preschoolers 5-6 years. The study was done with 50 children in two public institutions. To carry out this study, we have created questionnaires that enable us to obtain accurate results and to give hypotheses and conclusions about the factors that have influenced the ability or stagnation of the right expression of these children.

**Keywords:** stuttering, media, study, articulation, children

# Analyzing Students' Evaluation of Online Learning during the Covid-19 Pandemic

Zohaib Hassan Sain

Superior University, Raiwind Road Lahore, Pakistan

zohaib3746@gmail.com

**Abstract.** The purpose of this study was to assess the online instruction given to students during the COVID-19 epidemic. At the four universities of Lahore city that were the center of the study, 600 students pursuing undergraduate, graduate, and doctoral degrees participated. A mixed method was used to design the research using both qualitative and quantitative components. An online survey was employed during the quantitative phase. Online in-depth interviews using a semi-structured interview form were carried out during the qualitative phase. Local Lahore, Pakistan, inhabitants were among the responses. The content analysis led to the identification of 21 categories and three major themes. The following themes were accomplished: "It could have been better!" for their suggestions, "Face-to-face education is better!" for the bad parts of the student's experiences, and "Better than nothing!" for the positive aspects of their experiences. It has been decided that a technology approach should be employed to further expand the distance education curriculum in the four universities that have been selected.

**Keywords:** Covid-19, Distance Education, Online Education, University Students.

# The Interrelatedness between Affective and Cognitive Variables and their Impact on EFL Students' Written and Spoken Performance

Luiza Zeqiri PhD

Department of English Language, University for Business and Technology Kosovo

**Abstract.** Emphasizing the importance of the affective variables in the classroom plays a vital role in fostering students' achievements and cultivating their emotional states. Students' emotional distress can be induced by internal or external factors; classroom-related or personal. It is disheartening that foreign language anxiety is still present and very evident even now when most students speak English in non-academic surroundings. This anxiety amplifies when students have to write or deliver public speeches in front of their colleagues. Hence, this study examines the impact that affective variables (anxiety, apprehension, inhibition, motivation, attitude) have on students' written and spoken performance. The participants of this study were

75 students attending English courses at the Language Centre, at South East European University in Tetovo; 25 advanced students, and 50 students with pre-intermediate English proficiency levels. A structured student interview and two well-known standardized questionnaires were administered: "Foreign Language Classroom Anxiety Scale" by Horwitz, E.K., Horwitz, M. B., & Cope, J. (1986) and "Writing Apprehension Test (WAT)" by Daly, J. A., & Miller, M. D. (1975). It can be concluded that the students with lower English proficiency levels were more affected by the presence of the affective variables, which had a negative impact on their cognitive variables (memory, learning, and usage of the language) and resulted in poor written and spoken performance.

**Keywords:** *affective variables, cognitive variables, public speaking, productive skills*

# Logomachia in Some of Doris Lessing's Major Works

Dr. Erinda Papa

University Fan S. Noli Korce, Albania

erindapapa@yahoo.com

**Abstract.** Disillusioned with politics and engagement in the British left movement, as well as not finding political answers to human misery, Doris Lessing once again turns her eyes to the individual's self, making this individual responsible for the use of creative abilities and moral development. Under this perspective, the aim of this study is to present the psychological background that supports Lessing's psychoanalytic approach in some of her best long and short fiction works. In the multitude of psychoanalytic theories, R. D. Laing's and Carl Jung's theories present more interest in the influence and worldview formation of the writer. This study argues that Jung's encounter with madness and his near-death experience—provided Lessing with not only a successful *nekylia* by which to evaluate her protagonists' less successful inner journey but also a series of images that she reworked in her fiction.

**Keywords:** Doris Lessing, Carl Jung, R. D. Laing, *The Grass is Singing*, madness



# Empowering Teachers And Pre-Service Teachers With Digital Educational Resources

Dr. Dorela Kaçani

“Fan S. Noli” University, Korça, Albania  
Department of Education and Philology  
Department of the Foreign Languages

dkonomi@unkorce.edu.al

**Abstract.** This study aims to show the results of the training module “*Application of graphic, digital tools in education*” that was conducted from the 3rd to the 4th of February 2023 at the Department of Foreign Languages, in the Department of Education, at “Fan S. Noli” University, Korca, Albania. The study participants were 46 teachers and pre-service teachers from primary and secondary education schools in the Korca region. First, they learned how to use the digital graphic website: [www.canva.com](http://www.canva.com), in which they were able to create the following digital educational resources: lesson plans, worksheets, students’ profiles, presentations, posters for their classrooms, videos, socio-emotional activities, magazines, birthday cards, websites, whiteboard presentations, book covers, mind maps, comic strips, class schedule, concept maps, flyers, blog graphics, programs, and bookmarks. They also learned how to create classes and collaborate virtually with their students.

Another digital tool with which teachers and pre-service teachers were introduced was [www.Google-Docs.com](http://www.Google-Docs.com). They learned how to group students to collaborate virtually on a topic the teacher chose. The other tool was [www.flipgrid.com](http://www.flipgrid.com), a free video learning platform where teachers and pre-service teachers could create networks – unique places to share topics for discussion among students. The latter could answer and contribute to these topics with short videos to create debates, discussions, and experiments. The last tool that was introduced was [www.miroboard.com](http://www.miroboard.com). It was a platform where students could be grouped to discuss a topic.

After the training, teachers and pre-service teachers had to complete a questionnaire and hand in an assignment in which they used one of the above digital educational tools. The questionnaire results showed that all the teachers and the pre-service teachers correctly answered the questions about the functions of the above digital tools. The results of the assignments showed many examples of digital educational resources, with the hope that they will use them in their future teaching.

**Keywords:** training module, teachers and pre-serve teachers, digital educational resources, education

# Differentiated Instruction for EFL Students at the University Level: A Systematic Review

PhDc. Lisjeta Thaqi Jashari

Department of English Language, UBT College, Prishtina, Kosova  
www.ubt-uni.net

**Abstract.** This paper examines how university-level English as a Foreign Language (EFL) instruction can be tailored to meet the diverse needs of students with varying English proficiency. English proficiency is crucial in today's global academic landscape, especially when dealing with students from diverse language backgrounds.

We review different strategies and approaches used in differentiated instruction, which are designed to cater to students with varying English proficiency levels. Our review is based on a thorough examination of existing literature, where we assess the effectiveness of these strategies and identify areas for potential improvement.

We also discuss how assessment, personalized learning plans, technology integration, and cultural sensitivity are vital in making differentiated instruction work effectively. Additionally, we explore innovative teaching methods, such as flipped classrooms and blended learning, that show promise in meeting the diverse needs of university students. The paper also delves into providing constructive feedback and accurate language proficiency assessment within the context of differentiated instruction. Our findings aim to assist educators in universities, particularly those in predominantly Albanian-speaking faculties. We provide insights based on current practices while also identifying areas where further research is needed, with the ultimate goal of creating more inclusive and dynamic learning environments in EFL instruction at the university level.

**Keywords:** differentiate, instruction, EFL, students, review

# Seeing Beyond Colors: Pecola's Quest for Blue Eye in Morrison's Novel "The Bluest Eye"

Halil Bashota, Nora Suhodolli, Anjeza Krasniqi, Festina Vranja

Department of English Language, UBT College, Prishtina, Kosova

[www.ubt-uni.net](http://www.ubt-uni.net)

**Abstract.** The aim of this article is to demonstrate the portrayal of racial oppression and societal segregation of the African American community in Morrison's novel "The Bluest Eye". The dehumanizing traumas that its protagonists experience, the painful echoes of utter loneliness, and the pervading sense of being undervalued are all expertly conveyed by the author. The story puts a lot of focus on how terrible racism is for people of color. Pecola, the heroine of the book, experiences humiliation and hardship throughout her life, and this is cruelly exposed. It serves as an homage to the universal struggles that practically every line of the novel echoes and that are faced by many people all around the world. Inequality and discrimination are symbolically described, indicating stress, pain, and a profound disappointment with the worst sides of human nature. Her desire for a blue eye, together with her outspoken resistance to the planned uprooting of black communities, adds another level of stress to her life. She also longs for a secure home. Despite these difficulties, it continues to be a magnificent work that addresses the pervasive diseases that plague civilizations in our modern age.

**Keywords:** cosmopolitan, black community, racism, injustices, personal narrative.

# Naming Derivation Of Nouns In The Albanian Language

Ina Duhaxhiu

Master of Science-Linguistics -University of Tirana

**Abstract.** Over the years, language development has come along with the refinement of expressive tools, a refinement that consists of creating new semantic, lexical, grammatical, or phonetic units. Alongside the creation of these units, changes have occurred in the understanding of the semantic structure of words. Various studies have classified words into lexical classes, and among them, a particularly interesting class is that of noun derivations. However, do all Albanian grammars provide a definition for noun derivations? How difficult is it to make such a distinction? We chose to examine noun derivations based on the definitions provided by different Albanian grammars and some foreign language grammars regarding this lexical class, thus having a supportive pillar to include these names in explanatory dictionaries of the Albanian language. Developments in the understanding of the semantic structure of words lead us to different meanings that these nouns acquire. Often, we say "gold" implying a metal; while on the other hand, we imply behavioral or moral qualities such as "a good person," "beloved," "kind." However, do all noun derivations have an open structure? How many of them have developed other meanings? The purpose of this study is an attempt to shed some light on one of the intriguing aspects of semantics, namely the determination of noun derivations in the Albanian language and the presentation of semantic developments in this class of words. In addition to aiming to be helpful in the further study and analysis of noun derivations, this work aims to contribute to the creation of a dictionary for these nouns.

**Keywords:** semantic units, explanatory dictionaries, noun derivations, semantic structure

# The Portrayal of the Working Class in Victorian Literature

Nora Suhodolli, Anjeza Krasniqi, Festina Vranja, Halil Bashota

Department of English Language, UBT College, Prishtina, Kosova

[www.ubt-uni.net](http://www.ubt-uni.net)

**Abstract.** The Victorian era, from 1837 to 1901, marked a significant shift in British society, influenced by industrialization, urbanization, and the British Empire's rise. The abstract delves into the Victorian working class's diverse occupations, living conditions, and status, highlighting their struggles with labor, long hours, and meager wages, including child labor. The Victorian working class, in fluxing from rural areas, became urbanized, causing sanitation and public health concerns in slums. Workers' unions emerged for improved labor conditions and social justice. Victorian working class significantly influenced literature, arts, and culture, highlighting their struggles and contributions to art, music, and societal reform. This abstract explores the diverse experiences and contributions of the Victorian working class, highlighting their transformative struggles and the significant social and political changes that shaped the modern world.

**Keywords:** working class, justice, industrialization, social reforms, migration

# DIRECT CONSTITUENTS

Zejnije Bytyqi

UBT-University for Business and Technology, Pristina, Kosovo

**Abstract.** This paper addresses the issue of direct constituents, meaning that every sentence in a language is analyzed in terms of the ways natural relationships are formed, such as the concept of "vargu" (constituent). What is meant by 'vargu,' this is a technical term used in mathematical works on the grammatical structure of language and can be illustrated with the use of an abstract representation, the symbol  $+$ , which is used here to denote constituency. A

$+ b + c + d$ . In this paper, we focus on John Lyons and the thoughts provided by Chomsky, Bloomfield, and other scientists regarding this matter, specifically concentrating on the analysis of phrase meanings. The paper has been treated with special care, which we primarily reflect by presenting concrete examples that demonstrate these analyses. We will achieve this by presenting the scientific advancements in a chronological manner from the researchers we mentioned above.

**Keywords:** direct constituents, constituent, linearity, symbol, tree diagram, analysis, structure, rule, phrase.

# Conceptual Metaphor Theory in Teaching English as a Second Language

Dr. Sc. Eglantina Bilalli

University for Business and Technology-UBT

**Abstract.** The Conceptual Metaphor Theory offers a cognitive perspective on the role of metaphors in shaping human thought and language. This theory has found application in the field of teaching English as a second language (ESL) by providing educators with innovative ways to facilitate language acquisition and deepen understanding.

Conceptual Metaphor Theory posits that metaphors are not mere linguistic ornaments but fundamental cognitive constructs that structure how humans think and communicate. In the context of ESL teaching, this theory serves as a bridge between the learners' native language and English, aiding in the comprehension of complex and abstract ideas.

Moreover, ESL instructors utilize Conceptual Metaphor Theory to demystify English grammar and syntax, making complex structures more accessible by aligning them with metaphoric thinking patterns. Furthermore, encouraging ESL students to create their own metaphors fosters creativity and a deeper connection with the language.

Conceptual Metaphor Theory, when employed in ESL education, enhances students' critical thinking abilities by prompting reflection on language's cultural and conceptual nuances. It empowers learners to express their emotions and sensory experiences more vividly in English.

**Keywords:** Conceptual metaphor, ESL, learners, language

# **Kosovar EFL Teachers' Perceptions About the Benefits of Online Teaching**

Adea Haxhiavdyli MA

Department of English Language, UBT College, Prishtina, Kosovo [www.ubt-uni.net](http://www.ubt-uni.net)

**Abstract.** This study was designed to explore the perceptions of Kosovar EFL teachers on the benefits of online teaching. Due to the COVID-19 pandemic that has affected everyone around the world, Kosovo teachers had to switch from face-to-face to online teaching. To carry out this research, the mixed method approach was used to explore their attitudes towards online teaching. An online questionnaire was randomly distributed to 120 Kosovar EFL teachers. SPSS 22 was used to analyze the data taken from participants' responses. Their attitudes towards online teaching are negative, suggesting a need for curriculum revision; furthermore, teachers should receive instructions. Additionally, to facilitate online EFL teaching in EFL curricula, Kosovo schools should be supplied with proper technology equipment and internet access and provide good training for teachers to adjust as per their needs. The qualitative and quantitative results are interpreted to show that assessing teachers' perceptions of online teaching and their attitudes to the challenges of it are areas in need of attention from professional development designers and policymakers.

*Keywords:* EFL Teachers, online teaching, perceptions, benefits.



# "Phraseology As A Comprehension Problem Among EFL University Students In Kosovo"

Kadri Krasniqi PhD

Department of English Language, UBT College, Prishtina, Kosova

[www.ubt-uni.net](http://www.ubt-uni.net)

**Abstract.** Any EFL university student studying English will come across phraseology, be it during linguistics, translation of phraseologies, or dealing with the meaning of phraseology and the comprehension that comes with it. This is why the purpose of this research paper is to show how phraseology, when it comes to comprehension, can be seen as a problem and affect EFL students. In order to do that the following three questions were raised: 1) What are the main problems that students face/encounter in comprehension when it comes to phraseology?

2) What they found the hardest whilst comprehending? 3) What methods or techniques have they used in order to help themselves when tackling these phraseology comprehension problems? These three questions were answered through an online survey where fifty fourth-year English department students from various universities in Kosovo took part, which makes this study quantitative together with the use of various credible and reliable materials also qualitative. The results showed that as much as almost all the students considered themselves to have a good understanding of English and half incomprehension of Phraseology, the other half lacked knowledge and needed improvement, especially in regards to parts of Phraseology due to cultural reasons in not understanding them but also due to lack of exposure to phraseologies during past school years. Another problem that also showed up was the lack of exposure from universities and having to learn it on their own.

**Keywords:** Phraseology, Comprehension, EFL students, idioms, sayings, collocations.

# The Importance of Oral Presentations for Future Teachers of Language Departments -Students' Perception

The Case of Senior Students at the Department of Philology- University of Prishtina

PhDc Trëndëlinë Haliti -Sylaj

Department of English Language, UBT College, Prishtina, Kosovawww.ubt-uni.net

Trendeline.haliti@ubt-uni.net

**Abstract.** The aim of this paper is to find out the role of oral presentations in language departments in the Department of Philology. The focus was directed in two aspects: exploring the frequency of using oral presentations and the impact of them on the students' future professions. The information was taken from senior students, 20 from each department through questionnaires. We further analyzed the obtained data through descriptive analyses. The results show that all the departments of languages use oral presentations as a method of both teaching and evaluation. Because the majority of students in language departments have attended courses of teaching practicum and because most of them plan to be teachers, most of the respondents think that oral presentations have helped them a lot in developing the main skills needed for a successful teacher: an effective communicator, a good time manager, a successful cooperater, organizer, researcher, and a confident and flexible person. Even though they are aware of the benefits of presentations, they admit that they did not pay enough attention to them and if they would do them again, they would spend more time and effort in preparing them. The results of our research reveal that students do not pay enough attention to presentations even though they are conscious of their benefits. The findings show that some implications would be for teachers as well as for students. Based on some students' answers, teachers have not only teach students about how a presentation is done but also make them aware of the importance they have in their future professions especially, whereas students have to take seriously the process of preparing for a presentation.

*Keywords: oral presentations, role, use, impact, implications*

# Teachers' Work Motivation in the Lens of Needs Fulfillment, Needs Importance, and Individual Performance

GRETCHEN R. YBARRITA

Foundation University, Dumaguete City, Philippines

**Abstract.** This study aimed to assess teacher's work motivation as viewed on the fulfillment of needs and the importance attached to the needs and its influence on teachers' job performance. The study utilized the descriptive–correlational research design in the sense that it aimed to assess teachers' work motivation. This study was conducted in the Division of Tanjay City, Negros Oriental, among the secondary school teachers who were subjected to sampling. The study made use of a standardized questionnaire adopted from Feyyat Gokce's Assessment of Teacher's Motivation. Teachers' motivation was assessed in terms of two indices, namely: needs fulfillment index and needs importance index. The study utilized frequency and percentage distribution, weighted mean, Pearson r, Kruskal Wallis H-test, and t-test for its statistical treatment. The study revealed the following salient findings: (a) Teachers' level of work motivation as viewed on the needs fulfillment index and needs importance index is "Very High"; (b) Teachers' job performance based on IPCRF is "Very Satisfactory"; (c) A significant relationship was revealed between the needs fulfillment index and needs importance index; (c) A significant relationship was likewise revealed between the teachers' performance and the teachers' work motivation as viewed in the two indices. No significant difference was disclosed in the teachers' work motivation as viewed in the needs fulfillment index when grouped according to their profile. However, a significant difference was revealed in the teachers' work motivation as viewed in the needs importance index when grouped according to educational qualification. A significant difference was also found in the teachers' job performance when grouped according to sex, while age, educational qualification, and teaching experience were found not significant.

**Keywords:** work motivation, needs fulfillment index, needs importance index, job performance

# Learner's Distance Learning Challenges on the Use of Mathematics Self-Learning Modules (SLMs)

AGRIPINA S. JABANES

Foundation University, Dumaguete City, Philippines

**Abstract.** This study aimed to identify the learner's distance learning challenges on the use of Mathematics self-learning modules (SLMs). The respondents of this study were the 117 Grade 6 learners of the geothermal cluster schools, and they were chosen using systematic sampling technique. The survey was descriptive and correlational in nature. It utilized percentage, mean, weighted mean ( $wx$ ), Chi-Square Test, and Spearman Rank Correlation Coefficient as statistical tools. The study revealed that the prior performance of the learners in Mathematics before pandemic is in the satisfactory level. However, almost one-fourth of them have a performance that is fairly satisfactory and below. Moreover, the extent to which learners encountered challenges during the pandemic in terms of independent learning, time management, and self-motivation is "moderate", but more or less 45% of them have "somewhat high" to "very high" extent of challenges on every area. Furthermore, there is a significant, moderate, and inverse relationship between the prior performance of the learners and the challenges they encountered in terms of independent learning, time management, and self-motivation. Learners with lower prior performance tend to encounter more challenges than those learners with higher prior performance. Additionally, male learners experienced higher challenges than the female learners. Learners with parents of lower educational attainment also tend to encounter more challenges.

**Keywords:** prior performance, independent learning, time management and self-motivation

# **Technological Pedagogical Content Knowledge(TPACK): A Correlational Study among Secondary School Teachers' Level of Self-Efficacy and Teaching Competence**

FELIPE B. SULLERA JR.

Foundation University, Dumaguete City, Philippines

**Abstract.** This study aims to determine teachers' level of self-efficacy on Technological Pedagogical Content Knowledge (TPACK) and how this affects their teaching competence. The respondents of this study are the 170 teachers from the Division of Dumaguete City, Negros Oriental. The method used in the study is descriptive- correlational method and employed a validated self- made questionnaire. Results revealed that the level of self-efficacy of teachers on different aspects of TPACK is high. The level of teaching competence of the teachers based on the four domains of KRA is high. The overall level of self-efficacy of the teachers is significantly and strongly related to their overall level of teaching competence. There is a significant relationship between the subject taught by the teachers and their self-efficacy on the aspects of TPACK: TK; TPK; and TPACK. Those who are teaching Social Studies, TLE and MAPEH have higher self-efficacy compared to those who are teaching English/ Filipino and Math/Science. There is a significant and inverse relationship between the length of service of the teachers and their self-efficacy on the aspects of TPACK: TCK; TK; and TPK. Novice teachers have higher self- efficacy on the enumerated aspects than those who have been in the teaching field for a longer time. There is a significant relationship between the teachers' length of service and their self- efficacy in terms of content knowledge. There is no significant difference in the teachers' competence when grouped according to their profile. Generally, the level of self-efficacy of respondents on TPACK is high and it affects their teaching competence regardless of the subject taught, length of service and teaching position.

**Keywords:** TPACK, self-efficacy, teaching competence, KRA Performance

# **New Normal Education: Pre-Service Teachers' Motivational Factors and Their Preparations amidst the Pandemic**

GAY S. BUHAT

Foundation University, Dumaguete City, Philippines

**Abstract.** This study investigated the pre-service teachers' motivational factors and preparations amidst the pandemic. This was conducted in the two Teacher Education Institutions (TEIs) in Negros Oriental particularly in Foundation University (FU) and the Negros Oriental State University (NORSU). Employing descriptive research design, the study gathered 322 pre-service teachers to participate the survey. The following statistical tools were used: weighted mean and Spearman's Rank Correlation Coefficient. Findings from the study showed that the extent of intrinsic motivation is "very high" and "high" in terms of their extrinsic motivation. In addition, their extent of preparation in terms of class routines, instructional materials, class activities, assessment practices, and demonstration teaching is also at a "very high" level. Furthermore, the study found out that a "significant" and "moderate" relationship existed between the pre-service teachers' extent of intrinsic and extrinsic motivations and their preparation in terms of class routines, instructional materials, class activities, assessment practices, and demonstration teaching. Generally, it can be concluded that the extent of intrinsic motivation is "very high" and "high" in terms of their extrinsic motivation and is "significantly" and "moderately" related to their extent of preparation in terms of class routines, instructional materials, class activities, assessment practices, and demonstration teaching.

**Keywords:** Pre-service teachers, motivational factors, new normal education, teaching

# Teaching Strategies of Physical Education Teachers in Online Learning: Their Upshot to Students' Engagement and Performance

DONNA JEAN P. CABARUBIAS

Foundation University, Dumaguete City, Philippines

**Abstract.** The study tackles the utilization of teaching strategies of Physical Education teachers in online learning and how it affects to students' engagement and performance. The researcher utilized the descriptive-correlational design. The respondents of the study were random 283 college students from PE101-PE104 of Foundation University. This study utilizes percentage, mean, weighted mean, and Spearman's rank correlation coefficient. The researcher utilized a researcher-made questionnaire and employed the percentage, mean, weighted mean, and Spearman's rank correlation coefficient. The study revealed that collaborative learning has a significant and moderate relationship with student engagement but no significant relationship with performance. There is also a significant and strong relationship between the extent of utilization of teaching strategies (project-based learning, lectures and Q and A, and video presentations) during online learning and the students' level of engagement and performance. It is recommended that students should have breakaway rooms to discuss further topics and to come up with collaborative ideas and how to tackle projects for project-based learning. During their discussion, the teacher will give students time to voice out their ideas and merely act out as a facilitator so students can maximize the sharing of ideas. On the other hand, to increase the level of engagement, online classes have to be motivating and can capture the interest of the learners. For better academic performance, teachers are to constantly feedback on students' performance in school.

**Keywords:** Engagement, Online learning, Performance, Teaching Strategies

# The Odyssey of Public Secondary School Teachers Who Survived COVID-19: A Phenomenological Study

MARIE STAR P. KATADA

Foundation University, Dumaguete City, Philippines

**Abstract.** During the COVID-19 pandemic, teachers faced challenges due to the adoption of distance learning. This study explored the lived experiences of public secondary school teachers from the Schools Division of Dumaguete City who recovered from COVID-19. Through Colaizzi's method of data analysis, the findings revealed three emergent themes and nine clustered themes, providing insights into their diverse experiences. The following themes are: 1) Struggles of Teachers with COVID-19 which include (a) traumatic experiences; (b) cognitive dysfunctions; (c) social discrimination; (d) technicalities of covid-19; 2) During and After effects of COVID19 Teacher's Performance which include (e) work performance efficiency; (f) level of teaching capacity (g) coping mechanism; 3) Programs Promoting Teaching Effectiveness to Teacher who Has undergone COVID-19 which include; (h) mental health program; and (i) financial support. It was then found that the entirety of the teachers' lived experiences of COVID-19 has never been easy. It was subsequently discovered that the entirety of the teachers' lived experiences of COVID-19 was never easy. Consequently, it was recommended that the teachers, particularly those who survived and were traumatized by COVID-19, be provided with mental health support and financial assistance to effectively cope and perform well in their jobs within the new normal education settings.

**Keywords:** Lived Experiences, Secondary Public School Teachers, COVID-19, Distance Learning



# Social Skills and Academic Engagement of Learners Amidst the COVID-19 Pandemic

NIÑA JEAN S. ZERNA

Foundation University, Dumaguete City, Philippines

SHEENA MAE T. COMIGHUD

DepEd Region VII, Cebu City, Philippines

**Abstract.** The study aimed to examine the relationship of social skills and academic engagement among learners amidst the COVID-19 pandemic. The researcher utilized the descriptive-correlational design and employed the systematic random sampling technique in identifying the 117 respondents of Grades V to VI learners in Schools Division of Bais City namely Cambayungon Elementary School, Olympia Elementary School, and Bais City Pilot School. The researcher used validated questionnaires and employed weighted mean, Chi-square Test, and Spearman's Rank Order Correlation in treating the data. The study revealed that the extent to which learners display their social skills in the delivery of modular distance learning is classified as "high" in terms of social initiation and "very high" in terms of peer learning support and connection, cooperation, and communication. The study also unveiled that the overall level of learners' academic engagement in the new normal scheme of learning is categorized as "very high". Moreover, the findings also identified that there is a significant relationship between the extent to which the students display their social initiation, peer learning support and connection, cooperation, and communication and their level of academic engagement. Meanwhile, pupils with higher family income tend to display higher social skills than those students who are challenged financially.

**Keywords:** social skills, academic engagement, level of academic engagement in COVID-19, factors that affect academic engagement

# INVESTIGATING AND ADDRESSING CHALLENGES IN TEACHING READING SKILLS IN THE LANGUAGE AND COMMUNICATION CURRICULUM FIELD AT THE PRIMARY LEVEL

Donjete Latifaj PhD

University for Business and Technology, Kosovo, [donjete.latifaj@ubt-uni.net](mailto:donjete.latifaj@ubt-uni.net)

**Abstract:** This research study explores the challenges faced by primary school teachers in teaching reading skills within the Language and Communication curriculum field. The primary objective is to identify these challenges and propose strategies to address them effectively. The study involves a qualitative approach, utilizing semi-structured interviews as the primary data collection method. Thirty primary school teachers will be selected as respondents for the interviews, representing a diverse range of backgrounds, teaching experiences, and school settings. The interviews will delve into the specific difficulties encountered by teachers when instructing reading skills, considering factors such as student engagement, comprehension difficulties, limited vocabulary, and instructional strategies. Additionally, the study aims to understand how the Language and Communication curriculum framework incorporates reading instruction, identifying any gaps or limitations that may hinder effective teaching practices. The findings of the study will provide valuable insights into the challenges faced by primary school teachers in teaching reading skills within the Language and Communication curriculum field. The identified difficulties will serve as a foundation for proposing practical strategies and instructional approaches to address these challenges. The research outcomes will contribute to enhancing reading instruction within the curriculum, ultimately supporting students' literacy development and academic achievement. Furthermore, the study aims to generate recommendations for professional development initiatives tailored to primary school teachers, ensuring their preparedness to overcome the identified challenges in teaching reading skills within the Language and Communication curriculum field.

**Keywords:** 1) Challenges, 2) Teaching, 3) Reading Skills, 4) Language and Communication, 5) Primary school

# **IC-ENERGY EFFICIENCY ENGINEERING**

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# Advancing Toward Net-Zero Cities: Integrating Solar Energy Systems for Sustainable Urban Development - Exploring Challenges, Opportunities, and Innovation

Agron Bislimi\*, Blinera Bislimi

University for Business and Technology, Pristina, Kosovo

agron.bislimi@ubt-uni.net  
as64354@ubt-uni.net

**Abstract.** In the pursuit of sustainable urbanization, the integration of solar energy systems has emerged as a pivotal strategy. This paper delves into the transition toward net-zero cities by exploring the seamless integration of solar energy systems across the urban spectrum, extending from individual buildings to the broader urban environment. As cities strive for sustainability, the challenges, opportunities, and innovations associated with this integration are critical to shaping future urban landscapes. This study assesses the multifaceted journey of transitioning from conventional energy sources to solar-powered urban solutions, presenting a comprehensive overview of the challenges faced, the opportunities presented, and the innovative approaches that pave the way. By examining the intricate interplay between technology, policy, economics, and urban planning, this paper underscores the importance of holistic strategies for achieving net-zero energy cities. Through a combination of case studies, data analysis, and theoretical frameworks, this study contributes valuable insights into the transformative potential of solar energy integration, offering a roadmap for urban development that aligns with sustainable energy practices. Ultimately, this research reinforces the notion that the journey toward net-zero cities is not just a technical endeavor, but a collaborative and forward-looking mission that requires the convergence of diverse expertise to foster a greener and more sustainable urban future.

**Keywords:** Solar Energy Systems, Zero Cities, Sustainable Development, Innovation

# Advantages of a Gas Insulated Substation (GIS)

Armend Ymeri, Nexhmi Krasniqi\*, Gentian Kicaj, Diellza Morina

University for Business and Technology, Pristina, Kosovo

armend.ymeri@ubt-uni.net  
nexhmi.krasniqi@ubt-uni.net  
gk64385@ubt-uni.net  
dm64392@ubt-uni.net

**Abstract.** Electricity represents the main form of energy, necessitating its transmission through the grid's transmission lines to reach various distribution network nodes. In Kosovo, the transmission lines function at voltage levels of 110 kV, 220 kV, and 400 kV, whereas in Europe, certain transmission lines are equipped to handle higher voltage capacities. Furthermore, medium voltage distribution lines operating at 35 kV and 10 kV are dedicated to serving large-scale consumers, while the low voltage distribution system, up to 0.4 kV, is specifically designed to supply power to commercial and residential customers. To meet consumers' electricity consumption demands, appropriate voltage levels, as mentioned above, are established through the use of ascending or descending substations. This paper offers a concise introduction to the Gas Insulated Substation (GIS) system. A GIS is a high voltage substation wherein the primary conducting structures are enclosed within a sealed environment, employing SF<sub>6</sub> (sulfur hexafluoride) gas as the insulating medium. This paper begins by presenting the general characteristics of substations and subsequently delves into the fundamental concepts of GIS systems. Finally, it extensively explores the implementation of the GIS system in SS 110/10(20) kV - Pristina VI, emphasizing its significance and highlighting the distinctions between the GIS and Air Insulated Substation (AIS) systems.

**Keywords:** Gas Insulated Substation, Air Insulated Substation, Sulfur Hexafluoride Gas, Switchgear, Circuit Breaker, Bushings.

# Efficient energy building and pollution control

Afrim Syla

Kolegji UBT  
American European Education  
Energy Efficiency Engineering

afrim.syla@ubt-uni.net

**Abstract.** The purpose of the Research paper is through the development of new integrated lowenergy building solutions entirely based on extensive energy savings and renewable energy supply to meet the society's demands of 2030 and beyond for zero energy buildings. This is an attempt to develop a working definition for Zero Energy Building, which can be used by the participants in the research paper to focus their research and their development of new technologies. Secondly, the working definition might also be used as basis for a discussion of "Near Zero Energy Building" definition for future energy regulations in Kosovo that fulfills the recast of the EU Directive on Energy Performance of Buildings. A quantitative approach for managing construction pollution control that is based on construction resource leveling is presented. The parameters of construction pollution index, hazard magnitude are treated as a pseudo resource and integrated with a project's construction schedule. When the level of pollution for site operations exceeds the permissible limit identified by a regulatory body, a genetic algorithm (GA) enhanced leveling technique is used to re-schedule project activities so that the level of pollution can be re-distributed and thus reduced. The GA enhanced resource leveling technique is demonstrated using some on-site construction activities in a project

**Keywords:** Energy efficiency, near zero energy building, pollution control.

# Energy transition in support of climate conditions for Renewable Energy Sources

Vehebi Sofiu\*; Sami Gashi<sup>1</sup>, Besa veseli, Armend Ymeri, Muhaxherin Sofiu

UBT- Higher Education Institution, Kalabria 65, 10000, Prishtinë, Kosovë.

**Abstract.** The global perspective with its energy components offers an exploration of the advanced technological potential related to the benefits of the energy transition in renewable energy sources. The stability of the energy system integrated in pan-European markets with the concept of flexible and efficient generating capacities guarantees unified functionality of the energy system. The paper deals with the transition of the energy strategy with classical generation with an outdated system towards the path of reducing CO<sub>2</sub> emissions with deep transformation of electricity generation with renewable energy sources. In this paper, the European directive related to the decarbonizations of the generating capacities of Kosovo's thermal power plants and their replacement in the common market with the pan-European sector has been dealt with in a special way. In order to address the emergency of the generation transition according to the last strategy, Kosovo has significantly increased the integration of renewable energies in the mix of the current energy system. The challenge of this paper is the harmonization of policy-making with strategic investment projects that require increased flexibility with regulatory adaptation documents according to developed technological trends. The objective of this work is to increase the efficiency and effectiveness of energy in the final consumption of the part of consumers. The integration of the common energy market Kosovo - Albania will enable the optimization of strategic investments related to the removal of energy exchange barriers.

**Keywords:** Energy strategy, RES, Sustainable development, Market integration, Efficiency and effectiveness.

# Evaluating the impact of demand-side response in Kosovo during the energy crisis: What can we learn?

Arven Sylal<sup>1</sup> Avni Alidemaj<sup>2</sup>, Martin Patel<sup>3</sup>

<sup>1</sup>University of Geneva, Bd. Carl-Vogt 66, 1205, Geneve, Switzerland.

<sup>2</sup>UBT-Higher Education Institution, 10000, Pristina, Kosovo

<sup>3</sup>University of Geneva, Bd. Carl-Vogt 66, 1205, Geneve, Switzerland.

\*Corresponding author:

arven.syla@unige.ch

arven.syla@unige.ch

avni.alidemaj@ubt-uni.net

martin.patel@unige.ch

**Abstract.** The energy crisis in Europe due to war between Ukraine and Russia has led to a unprecedented situation. The volatility in gas supplies and prices has driven the wholesale electricity prices to increase enormously. Fortunately, this crisis has prompted many European countries to prioritise energy sector and advance green agendas. While the efforts to mitigate the energy crisis has primarily focused on the supply side (i.e., subsidies to energy suppliers), less attention has been paid to the demand-side. In this study, we examine how Kosovo managed the electricity crisis and consider the impact of demand-side. We analyze the data of electricity generation, demand, and prices from pre-crisis time period through to when electricity prices stabilized. We use three main indicators: load-shifting, energy efficiency measures, and PV installation, to address the posed question. For each indicator, we assess their impact on Kosovo's energy system in terms of the avoided system costs depending on net imports volumes. Finally, the objective of this study is to emphasize the importance of demand-side participation not only during energy crisis but also to highlight the need for mechanisms that unlock the potential of flexibility in future energy systems characterized by high electrification, renewables, and intermittent sources.

**Keywords:** Energy crisis, Flexibility, Demand-side, Load-shifting, Energy efficiency, PV, Kosovo.



# Exploring Current Trends, Innovations, and Advancements in Wind Energy, as well as its Potential and Future Prospect

Agron Bislimi\*, Rrezarta Hajrizi, Arbesa Nikaj

University for Business and Technology, Pristina, Kosovo

agron.bislimi@ubt-uni.net

rh64368@ubt-uni.net

an64369@ubt-uni.net

**Abstract.** This research delves deep into the realm of wind energy, meticulously examining its ever-changing landscape characterized by current trends, groundbreaking innovations, and remarkable advancements. The study sheds light on the dynamic path wind energy has taken, from its historical roots to its present state, while also casting a forward-looking gaze at its potential and prospective future contributions.

The investigation encompasses a comprehensive analysis of the latest trends shaping the wind energy sector. It showcases how these trends reflect the evolving needs of our energy systems and the measures being taken to meet them. Additionally, the paper explores how technological innovations have propelled wind energy forward, enhancing its efficiency, sustainability, and overall feasibility.

A particular focus is directed toward the potential and future prospects of wind energy. Through a detailed examination of current advancements, the paper offers a glimpse into the trajectory wind energy is likely to take. The integration of wind energy into existing energy systems, with a special emphasis on offshore developments, highlights its capacity to significantly bolster global renewable energy goals. This study contributes essential insights to a broad audience, including researchers invested in shaping the future of sustainable energy. As we navigate the challenges of a changing energy landscape, the findings and analyses presented in this paper serve as a guiding compass, illuminating pathways toward a more sustainable energy future.

**Keywords:** Current Trends, Wind Energy, Offshore Wind Energy, Future Prospect.

# Historic solar thermal development

Drita Qerimi <sup>1</sup>, Ardita Jusaj<sup>2</sup>

<sup>1</sup> UBT, Lagjia Kalabria p.n. 10000 Prishtinë, Kosovë

<sup>2</sup> Jusaj Kompany, Vitomiricë, p.n. 30000, Pejë, Kosovë

drita.qerimi@ubt-uni.net,  
ardita\_m\_lokaj@hotmail.com

**Abstract.** Renewable Energy Sources (RES) are the object of ever-increasing interest in their use in recent years. The main cause of this interest rise lies in the warning about the depletion of conventional energy sources on the planet: fuel, natural gas, coal and the end of uranium reserves. By contrast, RESs can be considered inexhaustible sources of energy at the human scale, as they use natural energy flows from the sun. Another reason for developing renewable energy sources is the uneven distribution of conventional energy sources on the planet, along with their uneven consumption. And, maybe the important reason is the fight against emissions that cause many negative phenomena such as: greenhouse effect, stratospheric ozone depletion, global warming, etc. These harmful gases are emitted through various human activities, including the production of energy from conventional energy sources. Thus, the reduction of energy produced from conventional sources by increasing the share of RES will reduce their emissions and consequences. The first commercial solar water heater was patented in 1891 by Clarence Kemp of Baltimore, after a recent rapid development the global capacity from solar water heating is 522 gigawatts thermal.

**Keywords:** Renewable Energy, Solar Thermal Energy, Saving Electricity, CO2 Reduction.

# Possibilities of Utilizing the Potential of Solar Energy in Kosovo

Nexhmi Krasniqi, Armend Ymeri\*, BlineraBislimi

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

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

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

[bb52898@ubt-uni.net](mailto:bb52898@ubt-uni.net)

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

**Abstract.** Solar energy aims to revolutionize energy production by harnessing the sun's sustainable power. Global concerns about climate change, energy security and the limited nature of fossil fuels continue to escalate, and we can rightly say that renewable energy sources have gained significant importance in Kosovo as well. Solar energy, in particular, is being targeted as a promising solution due to its practical and inexhaustible nature and environmentally friendly impact. Electricity production through photovoltaic (PV) systems is mainly intended to be connected to the grid in primary or secondary distribution because these small-scale producers cannot be connected to the grid directly. Through a comprehensive and interdisciplinary approach, the use of solar energy aims to set new standards in the implementation of renewable energy, utilizing the opportunities throughout the territory of the Republic of Kosovo. For sustainable development, this initiative has the potential to shape a cleaner, greener and safer future now and for generations to come. This paper proposes to setup a large-scale solar power facility in a sunny region, utilizing the latest photovoltaic technology to capture and convert solar radiation into clean electricity.

**Keywords:** Sustainable key production, storage and grid integration, photovoltaic system

# Reforming the energy sector through transition

Avni Alidemaj<sup>1</sup>, Adlum Ramadani<sup>2</sup>, Dasar Gashi<sup>3</sup>

<sup>1</sup>UBT-Higher Education Institution, 10000, Pristina, Kosovo

<sup>2</sup>Consultancy

<sup>3</sup>Kosovo Company for Supply of Energy - KESCO, 1000, Pristina, Kosovo

avni.alidemaj@ubt-uni.net

avni.alidemaj@keds-energy.com

dasar.gashi@kesco-energy.com

adlum.ramadani@gmail.com

<sup>2</sup>Corresponding author: adlum.ramadani@gmail.com

**Abstract.** The energy crisis sent a strong message to countries that depend on electricity imports to cover consumption demand. In addition to the insufficiency to cover the demand, the astronomical prices and the endangerment of the entire electrical system were the consequences that they themselves face. As we analyze past experiences and address the challenges the energy sector continues to face, reforming it through transition is a must to anticipate what may happen. Although the complete separation from the need for imports is almost impossible, this is due to the fact that energy is a complex and unpredictable field, using opportunities or creating them to generate energy from other sources is a step that must be taken in order to maintain the stability of stable energy supply for consumers.

At this time when every country is competing with each other to meet the needs of its citizens with energy and when its consumption continues to grow more and more out of proportion to the possibilities of providing it as a result of the reduction of opportunities for its generation or as a result of the influence of external factors that reduce the possibility of making it available (like the recent case with Russian gas), then the reform of this sector would create the necessary conditions to fulfill it.

Based on the developments mentioned above, the challenging past of the energy sector and the future we aspire to, through this paper, it is intended to present the possibilities and advantages of reforming through transition, analyzing, among other things, the current state of the energy sector.

**Keywords:** Electric energy, energy crisis, transition, renewable resources, energy system.

# Smart Self - learning adaptive modeling buildings and their impact on creation of the smart cities in Kosovo, challenges and opportunities

Fuat Pallaska, Visar Hoxha

University for Business and Technology, Pristina, Kosovo

Fuat.pallaskai@ubt-uni.net

**Abstract.** The scope of this study is to research or to find the tools for the modeling buildings and simulation on creating the models of smart houses and sustainability and their impact on the whole buildings systems and technologies for better and smarter living conditions for community. Increasing the Energy efficiency and improving the new capacity technologies for Building modeling systems and facilities should create the conditions for the Smart Cities tools and technology and this application in the practice, using the smart modeling systems such as (BIM - modeling) or others adaptive and self-learning buildings. Deepest analyzing Models used for Smart self-learning and Adaptive models of this buildings, can be sample for deep analyses and hypotheses methodology used for further research and developing the new models for the Smart Cities which can be implemented in the construction sector in Kosovo. We find a lot of challenges and more of the opportunities using during the estimation on this research study. Therefore, this paper will try to address the challenges and integration technologies for creating and estimate the study outcomes in the field of Smart cities and technologies used.

**Keywords:** Smart house, Self-learning, Adaptive houses, Smart Cities, Construction sector Kosovo, Smart living, Smart technologies

# **Solar Energy and Smart Grids: Analyzing the integration of solar energy within smart grid systems, encompassing aspects such as demand response, energy management, and grid stability**

Agron Bislimi\*, Arbesa Nikaj

University for Business and Technology, Pristina, Kosovo

agron.bislimi@ubt-uni.net

an64369@ubt-uni.net

**Abstract.** The integration of solar energy into smart grids has emerged as a pivotal solution to address the pressing challenges of increasing energy demand, environmental concerns, and the need for resilient power distribution. This paper investigates the multifaceted aspects of smart grid integration with a focus on solar energy, encompassing demand response, energy management, and grid stability. Demand response, a cornerstone of modern grid management, is explored in the context of solar energy integration. The dynamic nature of solar power generation necessitates the alignment of energy consumption patterns with availability.

Through advanced metering and real-time communication, demand response strategies enable consumers to actively participate in load modulation, optimizing energy consumption during peak solar production periods. Energy management strategies play an indispensable role in harnessing the potential of solar resources effectively. The paper delves into innovative approaches such as predictive analytics, machine learning algorithms, and energy storage solutions to enhance grid efficiency and mitigate the intermittency inherent in solar generation. These techniques enable utilities to optimize resource allocation and curtailment strategies, thus fostering a harmonious integration of solar power. Ensuring grid stability remains a paramount concern in the face of solar energy integration. Variability in solar output can impact voltage levels, frequency stability, and overall grid reliability. The abstract analyzes grid modernization measures such as advanced monitoring and control systems, energy storage, and microgrid implementation to bolster grid resilience and mitigate potential disruptions.

**Keywords:** Solar energy integration, Smart grid systems, Grid reliability, Energy management,

# The impact of renewable energy sources and their impact on the energy system

Rexhep Shaqiri<sup>1\*</sup>, Vezir Rexhepi<sup>2</sup>

<sup>1\*</sup>University for Business and Technology, Pristina, Kosovo  
rexhep.shaqiri@ubt-uni.net

<sup>2</sup>University of Prishtina, "Hasan Prishtina", Kosovo  
rvezir.rexhepi@uni-pr.edu

**Abstract.** The power system of Kosovo is a compact and integrated structure at the hierarchical level. It plays an important role in the process of transmission and distribution of energy to consumers. Based on this importance analysis is necessary in order to estimate the medium and long-term plans of the production of electricity and development of the power generation plants. With the implementation of Distributed Generation (DG) in the distribution power system, there are many issues that need to be addressed and analyzed, as the impacts can be significant on the operation and stability of the distribution system. When DG is connected to the distribution system, it affects the performance of level voltage, short-circuit level, and power flow in the power system. This paper is presented a feasibility study of the Mareci (village) project of wind production 32.8 MW, which new substation Mareci this renewable source will be connected to the line 110kV connecting SS Pristina 4 - SS Gjlani 1. The maximal power output of 32.8MW will be collected in the main substation in new SS Mareci which contain two power transformers with capacity 20 MVA MVA. The methodology is based on the Newton Raphson model that deals with the load flow analysis of wind energy production and structuring relay protection system.

**Keywords:** Wind and PV solar park, Relay protection system, Short circuit current, Voltage profile, Power system performance and stability.

# The new EPBD directive A case study of a renovation of a country house in Kosovo

Kliton Bylykbashi, Besa Veseli, Visar Krelani

UBT, Pristina, Kosovo, Institution of Higher Education, UBT-College

kliton.bylykbashi@ubt-uni.net

besa.veseli@ubt-uni.net

visar.krelani@ubt-uni.net

**Abstract.** With the "green houses" directive, the European Union intends to reduce GHG emissions by 55% to 2030 compared to 1990 levels and achieve zero emissions by 2050. Reducing emissions of polluting gases and fighting global warming are two objectives of the utmost importance for Europe, pursued through a policy that encourages the ecological transition. One of the most discussed interventions in this sense is the so-called Green Homes Directive or the EPBD Directive which aims to gradually eliminate buildings with inadequate energy performance by promoting the redevelopment of energy-intensive buildings. How can Kosovo respond to this objective at this moment? This article will address the dimensioning of a building to be renovated, respecting the European parameters. The building will be zero consumption, composed of an excellent passive project (thermal insulation of the opaque walls and windows), optimal system design (low temperature generation systems, photovoltaic systems, charging for the electric car) and by an excellent system for monitoring and managing the building's thermal and electrical loads.

**Keywords:** Photovoltaics System, Climate Change, NZEB, Storage Systems, Sustainable Economy, Energy Independence, Renewable Energy, Energy Saving.



# The new European Directive EPBD (Energy Performance of Building Directive) and the added value of the photovoltaic system

Kliton Bylykbashi<sup>1</sup>, Besa Veseli<sup>1</sup>, Shqiprim Ahmeti<sup>1</sup>, Vehebi Sofiu<sup>1</sup>, Luca Rubini<sup>2</sup>

<sup>1</sup>UBT-Higher Education Institution, Health care department, Lagjia Kalabria, 10000 p.n., Prishtinë, Kosovo

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

kliton.bylykbashi@ubt-uni.net  
besa.veseli@ubt-uni.net,  
shqiprim.ahmeti@ubt-uni.net,  
vehebi.sofiu@ubt-uni.net  
luca.rubini@cirps.it

**Abstract.** With the "green houses" directive, the European Union intends to reduce harmful gasses emissions by 55% to 2030 compared to 1990 levels and achieve zero emissions by 2050, with the aim of redeveloping the European building stock and improving its efficiency energy. The provision advanced by the European Commission has been included in the Fit for 55 reform package and has the objective of acting as a priority on the 15% of the most energy-intensive buildings (located in energy class G) for each Member State; in Italy there are approximately 1.8 million residential buildings, out of a total of 12 million. The need to increasingly electrify domestic services can only pass through the installation of photovoltaic systems. In fact, if on the one hand these lead to an immediate benefit in terms of energy savings (linked to the reduction of the cost in the bill), on the other hand the calculation of the energy requirement if combined with a heat pump, means that the thermal contribution for the share of heating, cooling and domestic hot water production, inside the building is almost zero (or zero based on the sizing of the building/plant system). This article will analyze a 120 square meter building (well insulated, equipped with a hybrid heat pump), with an 8 kW photovoltaic system with 15 kWh of storage batteries, and without the photovoltaic system and storage, demonstrating how the energy class and the consumption of the property, can radically change in the two configurations.

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

# THE NEW NZEB HOMES SET BYEUROPE AND A CASE STUDY FOR KOSOVO

Kliton Bylykbashi<sup>1</sup>, Besa Veseli<sup>1</sup>, Shqiprim Ahmeti<sup>1</sup>, Vehebi Sofiu<sup>1</sup>, Luca Rubini<sup>2</sup>

<sup>1</sup>UBT-Higher Education Institution, Health care department, Lagjia Kalabria, 10000 p.n., Prishtinë, Kosovo

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

kliton.bylykbashi@ubt-uni.net  
besa.veseli@ubt-uni.net,  
shqiprim.ahmeti@ubt-uni.net  
vehebi.sofiu@ubt-uni.net  
luca.rubini@cirps.it

**Abstract.** With the new EPBD directive, the European Union has announced the way forward for the construction of new buildings and the renovation of old ones. Kosovo, although not part of the European Union, does not want to fail in the sensitive issues of energy efficiency. In this article, a ZEB model building will be presented, consisting of an excellent passive system (well-insulated walls and windows) combined with a heat pump hybrid, with radiant floor heating, integrated with a photovoltaic system and batteries. The building will also have an electric vehicle charging system, so the photovoltaic system will be overrated. The energy class of the building is not only maximum A4 or A++ or A0, but the building will be a real case of Zero Energy Building.

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

# Urban wastewater before and after treatment at the Plant of Skenderaj

Sami Gash\* Vehebi Sofiu, Shkëlzim Ukaj, Besa Veseli

University for Business and Technology, Calabria 65 10000, Pristina, Kosova

sami.gashi@ubt-uni.net

**Abstract.** Wastewater and atmospheric treatment are of particular importance for agriculture and for the well-being of citizens so that after treatment they can be placed in a healthy way in nature. In this paper, we have analyzed some basic physicochemical parameters of urban wastewater of Skenderaj, untreated atmospheric water before entering the plant and after treatment of these waters, which after reaching the degree of purity from 80 to 85%, the water flows into Klina River. In this paper, we have reflected detailed data on how wastewater undergoes changes in the parameters that we analyzed after its treatment and this was the purpose of our work.

**Key words:** DSS (Dissolved Suspensive Substances), COD (Chemical Oxygen Demand), BOD5 (Biochemical Oxygen Demand), Dissolved oxygen.

# Distance protection and the importance of precision measuring equipment

Qëndresa Sylja

UBT-Higher Education Institution, Faculty of Energy Efficiency Engineering Prishtine, Kosove

qendresa.sylja@ubt-uni.net

**Abstract.** As we know short circuits are an inevitable phenomenon for the electrical power system. These damages must be quickly detected by the relay protection system and the damaged part must be isolated quickly. The defense of a line is of particular importance. When a defense system is designed, a compromise must be made between economics and performance, independence and security, complexity and simplicity, accuracy and speed. From a technical point of view, the correct performance of the relay protection has been of particular importance over the years. It is not desirable for a node of the system to be taken out of service due to a wrong action of the relay protection leading to energy faults, accompanied by penalties to consumers and disadvantages vis-à-vis competitors for companies operating in the energy market. In some cases the local backup protection is combined with the remote backup protection which is defined as a backup of the backup. In numerical relays, often at the "software" level, the user can implement functions based on logical mathematical blocks. In this combination with the rapid developments in information technology with applications in the system in the electrical power system made the relay protection quite efficient and powerful, any error in the communication channels or human errors can cause the relay protection to malfunction or malfunction.

**Keywords:** Power System, Relay protection, damaged, energy.

# **IC-INFORMATION SYSTEMS AND SECURITY**

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# A DSL Framework for requirements engineering

Tea Tavanxhiu, Kozeta Sevrani

University of Tirana, Tirana, Albania

tea.tavanxhiu@unitir.edu.al

kozeta.sevrani@unitir.edu.al

**Abstract.** This research paper explores the integration of Domain-Specific Languages (DSLs) as a modeling framework for requirement engineering in software development lifecycle. The instantiation of the DSL is enabled form a proposed architecture of the Framework. The study investigates the benefits and challenges of using DSLs, emphasizing increased involvement of domain experts, reduced delivery time gaps, wider visibility, and reduced technology dependency. Through an Active Design Research (ADR) methodology, the paper consists in the execution of the first ADR cycle, proposing design principles for a DSL Framework. The findings highlight the importance of integrating domain knowledge, conceptual modeling, and semantic enrichment in requirement engineering. Further refinement of the empirical studies and feedback gathering from users on the proposed DSL framework will be part of the research project of the authors starting with this.

**Keywords:** requirement engineering, information system design theory, action design research, domain specific language

# Passive Optical Network with Modular Optical Line Terminal in Software Defined Environment

Jakup Ratkoceri

UBT, Pristina, Kosovo

University of Twente, Faculty of Engineering Technology, Enschede, The Netherlands

[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) has 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.

In the traditional PON, the optical line terminal (OLT) supports multiple layers of traffic management and shaping, as well as Layer 2 and 3 switching functions. In most cases, the network management systems (NMS) for conventional OLTs are proprietary. This means that the OLT functionality includes the control software, Layer 2/3 switching, the PON medium access control (MAC) layer, and the PON physical (PHY) layer. These functions can be split into several parts so that PON specific functions such as MAC and physical layer optics as well as generic network functions can be enabled. This concept helps us to create modular OLT. Integrating these specific PON functions into an SFP+ module allows the use of a non-proprietary white-box switch environment to accommodate these micro-OLTs. The management interface could be a Telecom Element Management System (EMS) or an SDN that supports NECONF and RESTAPI interfaces. This will provide much-needed flexibility to telecom operators and the cable industry to meet the ever-increasing demand for higher bandwidth services.

**Keywords:** Broadband, PON, SDN, OLT

# Blockchain for Open Information Governance: A New Era of Data Sharing

Vehbi Neziri [0000-0001-7787-4580] and Blerton Abazi [0000-0002-8434-0648]<sup>1</sup> UBT - Higher Education Institution, Prishtina, Kosovo

vehbi.neziri@ubt-uni.net  
blerton.abazi@ubt-uni.net

**Abstract.** A new era of open information governance and data sharing has been launched by blockchain technology. This paper explores the transformative potential of blockchain in revolutionizing the way information is governed, accessed, and shared in both the public and private sectors. Blockchain's decentralized and immutable ledger provides a secure and transparent platform for data management and exchange, eliminating the need for intermediaries and significantly reducing the risk of data tampering, thus enhancing data integrity. With the help of this cutting-edge technology, people and businesses can better manage their data while maintaining security and privacy. The paper explores actual blockchain use cases in several industries, including healthcare, finance, education, and supply chain management. It highlights the advantages of using blockchain technology, including increased stakeholder trust, less administrative paperwork, and improved information traceability. The study additionally discusses and acknowledges the challenges and considerations that need to be considered while deploying blockchain for open information governance. Scalability issues, legal frameworks, and the importance of interoperability standards are a few of these. In conclusion, this paper underscores how blockchain technology is transforming information governance by promoting openness, reliability, accessibility, and transparency. Blockchain represents a paradigm shift in data management and sharing that encourages a more transparent and collaborative environment for the exchange of information across industries.

**Keywords:** Blockchain, Open Data, Open Information, Data Sharing, Immutable Ledger.



# Building an integrated system for department asset management and control to improve efficiency and reduce costs

Art Hoxha, Agim Zuzaku [0000-0003-3811-9093]

University for Business and Technology, Prishtina, Kosovo

art.hoxha@ubt-uni.net  
agim.zuzaku@ubt-uni.net

**Abstract.** Asset management and departmental coordination are two key factors for the success of an organization. This paper aims to address the challenges and benefits of building an integrated system for asset management and departmental control in medium-sized enterprises. The main problem that this paper addresses is the isolation and lack of effective communication between departments, leading to deficiencies in asset management and control. Also, the management of various and numerous assets often presents great challenges for organizations. The main goal of this paper is to build an integrated system that will improve the efficiency of the organization and reduce costs. The research is based on academic literature and relevant sources in the field of asset management and departmental control. To achieve the aims of the paper, combined qualitative and quantitative methods were used, including interviews with the organization's staff, department managers and technical personnel. To reflect a complete picture of the organization, documents such as financial and asset reports were analyzed.

The main hypothesis of this paper is that the construction and implementation of an integrated system for asset management and control of departments will increase the responsibility and transparency of business processes in medium enterprises. Such a system will contribute to increasing efficiency and reducing costs. This research is important to improve the performance of organizations and optimize the use of resources, providing a comprehensive approach to business processes and helping to achieve the strategic goals of the organization.

**Keywords:** Integration, Asset Management, Departmental Control, Efficiency, Enterprise.

# Business model strategy in retail industry (Case study Republic of Kosovo)

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

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

\*\* University Haxhi Zeka, Pejë, Republic of Kosovo

ermira.shehu@ubt-uni.net

osman.sejfiqaj@uhz-uni.net

**Abstract.** The power of business model, determine the success of business. Previously doing business was based on some main pillars, and the success of the business were depend mostly in the aim and strategy developed by the owner. Today doing business and having success is about to make real time transformation to fulfill the market needs. Having a huge team, not every time lead to a success, but developing new models supported by technology can provide useful idea and strategy enhanced by the team.

With this paper our aim is to identify main pillars to develop new business model, oriented in technology. Today retail business is very dynamic, and the business need to use tools to enhance innovation and digitalization of process.

Focusing in private label products, buying, loyalty card, strong branding and marketing, consumer oriented, stock management, online sale, staff motivation and trainings and promotion strategy, are some of the main pillars that we will elaborate more in details during this paper.

With this study, the aim is to identify the strategies that can be useful and produce development of business models in dynamic business such as retail.

**Keywords:** business model, retail, strategy, succeed.

# Challenges of Cybersecurity Policies and Regulations Implementation in Developing Countries

Ylber Limani, Tanita Krasniqi

UBT, Prishtina, Kosovo

{ylber.limani, tk41375}@ubt-uni.net

**Abstract.** There is a lot of evidence that shows that cyber security has become a critical concern globally. Consequently, implementation of effective policies and regulations is crucial for protection of digital assets and qualifying cyber threats. This paper supposes that developing countries face exceptional challenges in the implementation of cybersecurity policies and regulations. This paper explores the major challenges encountered by developing countries in effectively implementing and enforcing cybersecurity policies and regulations. The supposition is that developing countries regularly lack the necessary processes, systems, resources, infrastructure, and expertise to tackle cyber threats effectively. Correspondingly, budgetary constraints hinder the establishment of robust cybersecurity frameworks and the purchase and implementation of advanced technologies. Insufficient commitment and investment in cybersecurity strategy further worsens the challenge. Additionally, the lack of international cooperation and coordination of the country presents another significant challenge. Finally, cultural, social, and legal factors can also pose obstacles to the implementation of cybersecurity policies and regulations in developing countries.

**Keywords:** Information systems, data security, cybersecurity policies, advanced technologies.

# Data Security Challenges of Information Systems in the Health Sector in The Developing Countries: The case of Kosova

Ylber Limani, Arbenita Bequku

UBT, Prishtina, Kosovo

{ylber.limani, ab41301}@ubt-uni.net

**Abstract.** Data security is a serious concern for information systems in the health sector, particularly in developing countries. The digitalization and integration of health information systems have improved healthcare delivery; however, it has also exposed sensitive patient data to various security challenges. This paper explores the exceptional data security challenges faced by information systems in the health sector in developing countries. This category of countries often struggles with limited resources, infrastructure, and technical knowledge, which makes them more vulnerable to data breaches and cyber threats. One of the primary challenges is the lack of strong data protection system based on adequate frameworks and regulations. Consequently, healthcare organizations and individuals may become vulnerable to data breaches. Insufficient investments in information technology infrastructure, including secure networks, firewalls, and encryption technologies, further worsen these contests. This paper aims to identify data security challenges in the health sector by analyzing the case study of Kosova as a new and developing country.

**Keywords:** Information systems, health sector, data security, data breaches, cyberthreats.

# Decision Support Systems in IT Project Management

Almira Zenelaj, Agim Zuzaku [0000-0003-3811-9093]

University for Business and Technology, Prishtina, Kosovo

almirazenelaj@gmail.com

agim.zuzaku@ubt-uni.net

**Abstract.** This research study analyzes the use of Decision Support Systems (DSS) in project management in the Information Technology (IT) sector. Project managers, whether the project is in the field of information technology or not, face the challenge of making important decisions that affect the success of their projects and organizations. DSS offers advantages such as improved accuracy, increased speed, flexibility, objectivity, improved collaboration, and enhanced transparency, helping managers make more informed decisions. The methodology of this research uses a quantitative and qualitative approach and includes theoretical analysis, systematic literature review, and comparative methods. The main goal is to understand how often DSSs are used in project management in IT/Software Development, which DSSs are used more often, and their impact on the decision-making process. Through a case example, the study explains how an IT project manager used a spreadsheet-based DSS to select a database management system for a software application. The use of DSS has helped in making an informed decision and reduced the time and effort of manual data analysis. Also, this study points out that DSS is not a one-size-fits-all solution for every project, but must be carefully tailored to meet the needs and goals of a given project. In the end, the help of a DSS in managing IT projects is valuable, but managers must remain cautious and use DSS in their particular context to ensure the success of their projects. This study aims to improve our understanding of the role of DSS in IT project management and provide practical guidance for project managers in this field.

**Keywords:** Decision Support System (DSS), Project Management, Information Technology (IT), Decision Making, Data Analysis.

# Decision-Making Under the Influence of Technology as A PROCESS INDICATING THE COMPATIBILITY OF ACTUALITY -LEADING POLICY

Gelina Maliqi

UBT- Prishtinë, Kosovo

gelinamaliqi@gmail.com

**Abstract.** Today we can freely say that the development of technology is currently the main word of developments in every field of life. Technology itself includes the whole application of methods and ideas that facilitate concrete processes and practices in human life. These already fast-paced processes are undergoing a rapid development that to some extent are giving quite significant effects on change, being reflected in the facilitation and speed of human life processes. With such a rapid development, today's business has undergone fundamental and advanced changes, which are reflected in many aspects, including decision-making. Seeing this as a process that is directly related to business development policies, digitalization and technologies that are being applied so vigorously today, with positive effects and quick results. This development, based on many scientific analyses, is bringing humanity, in addition to efficiency and rapid changes, also some disadvantages of the social- economic aspect, where the adaptation to rapid technological developments and the transfer of technologies can be singled out, as well as the reduction of jobs that is directly related to the application of advanced application technologies and methods. Seeing this in the impact of decision-making and business perspectives, the simplicity with which this process is carried out is currently striking, as meetings, discussions, analyzes and many other elements of decision-making are applied with online or digital methods, thus avoiding elements of extensions former of the process. Through the application of artificial intelligence, any project-plan or project-idea is realized and becomes more visually tangible today, which is quickly materialized and simplifies the way of understanding or visualization and expectations. All these technological changes, in addition to positivity, have also brought challenges and dilemmas of this business revolutionization, which today exceeds any previous knowledge and standards on management, marketing and decision-making methods through digitalization processes as a whole.

**Keywords:** Decision Making, Technology, Digitization, ArtificialIntelligence, Development Policy

# Investigating the Impact of Mobile Learning Apps on Student Engagement and Learning Outcomes in Higher Education

Adea Haxhiavdyli

UBT, Prishtinë, Kosovo

adea.haxhiavdyli@ubt-uni.net

**Abstract.** This study investigates the influence of mobile learning apps on student engagement and learning outcomes in higher education. With smartphones becoming ubiquitous, mobile apps for learning are on the rise. Employing a mixed-methods approach, we examine the impact of these apps on student motivation, participation, and academic performance. Preliminary findings suggest that mobile learning apps substantially impact student engagement, enabling flexible learning experiences that transcend the confines of traditional classroom settings. These apps promote self-directed learning and provide opportunities for immediate feedback, fostering increased motivation among students. Moreover, students using these apps demonstrate improved learning outcomes, manifesting in enhanced academic performance and more profound comprehension of course content. This research sheds light on the potential benefits of integrating mobile learning apps into higher education while addressing the associated challenges.

**Keywords:** Mobile learning apps, student engagement, higher education, learning, impact, challenges

# Integrating IoT Devices in Smart Homes: A Project Management Perspective

Dashmir Istrefi

UBT, Prishtina, Kosovo

dashmir.istrefi@ubt-uni.net

**Abstract.** Integrating Internet of Things (IoT) devices into smart homes is revolutionizing the way we live, providing convenience, energy savings, and improved security. This research paper explores the complex process of integrating IoT devices into smart homes from a project management perspective. The article explores the challenges project managers face, including device compatibility, interoperability, cybersecurity, and user experience. It delves into the strategies and methods used in planning, execution, and project risk management specific to IoT deployments in the residential space. Through comprehensive analysis of real-world case studies and best practices, this article provides valuable insights on how to effectively apply project management principles to ensure integrated Successfully integrating IoT devices into smart homes. The findings shed light on the crucial role played by project managers in orchestrating seam-less IoT integration, ultimately enhancing the quality of life for smart home residents.

**Keywords:** IoT devices, smart homes, project management, integration, compatibility, interoperability, cybersecurity, user experience, residential spaces, case studies, best practices



# Optimizing Energy Efficiency in Smart Homes using IoT: Project Management Strategies

Dashmir Istrefi

UBT, Prishtina, Kosovo

dashmir.istrefi@ubt-uni.net

**Abstract.** In the age of smart homes and environmental sustainability, optimizing energy efficiency is a top priority. This research study digs into the convergence of IoT technologies and project management methodologies to develop energy-efficient smart houses. The project investigates novel approaches to monitor, regulate, and minimize energy use in residential areas, with a focus on the integration of Internet of Things (IoT) devices. The paper investigates the obstacles that project managers encounter while coordinating the deployment of energy-efficient IoT devices, addressing concerns of compatibility, real-time data analysis, and user behavior adaptation. This research study elucidates ways for smooth execution through an in-depth investigation of successful case studies and practical project management methodologies. This article illustrates how project managers can lead programs that dramatically improve energy efficiency in smart homes, support sustainable living practices, and reduce the carbon footprint by utilizing sophisticated methodologies in project planning, resource allocation, and risk management.

**Keywords:** IoT devices, smart homes, energy efficiency, project management, integration, compatibility, real-time data analysis, user behavior adaptation, sustainable living, project planning, resource allocation, risk management, environmental sustainability

# Opportunities and Challenges for Digital Archives: The Case of Eduarkiva

Bardha Qirezi [0000-0001-7294-7058] and Diana Lekaj [0000-0001-8573-924X]

UBT, Prishtina, Kosovo

bardha.qirezi@ubt-uni.net  
diana.lekaj@ubt-uni.net

**Abstract.** This paper discusses the role of digital archives for the construction and preservation of collective memory, aiding communication, decision-making, and accountability in Kosovo's fragmented education system throughout historical periods with contested historical narratives. A proposed solution with eduarkiva (eduarkive.com), a dedicated platform for documenting crucial education records, promoting historical understanding and reconciliation, is discussed in light of digital archives as an opportunity to enable access, preservation, interaction and dissemination of historical documents. Challenges such as data storage, security, lack of human and infrastructure resources are also presented. The paper demonstrates key issues faced in the research and development process and in the curation and participation methodology. It offers practical lessons for researchers, policymakers, and educators, emphasizing the vital role of archives in shaping collective identity and memory in an evolving digital era.

**Keywords:** digital archive, eduarkiva, education, collective memory

# The Impact of Artificial Intelligence on Accounting: Revolutionizing Financial Management

Fidane Spahija Gjikolli

UBT, Prishtina, Kosovo

fidane.spahija@ubt-uni.net

**Abstract.** The advent of Artificial Intelligence (AI) has ushered in a transformative era in the field of accounting. This paper explores the profound impact of AI technologies on accounting practices, focusing on their implications for financial management, data analysis, and decision-making processes within organizations. AI-powered accounting systems have revolutionized traditional bookkeeping tasks, automating routine processes such as data entry, reconciliation, and report generation. This automation not only reduces the risk of human errors but also significantly enhances efficiency, allowing accountants to redirect their efforts toward more strategic and value-added activities. Furthermore, AI-driven data analytics tools have empowered accountants to extract actionable insights from vast volumes of financial data in real time. By leveraging machine learning algorithms, accountants can identify trends, anomalies, and potential risks, facilitating proactive decision-making and resource allocation. This has proven instrumental in enhancing financial forecasting accuracy and aiding in the development of robust business strategies. Ethical considerations and data security are paramount in the accounting profession, and AI is also making its mark in these areas. AI systems can monitor financial transactions for anomalies and potential fraud, contributing to greater transparency and trust in financial reporting. While the integration of AI in accounting brings forth numerous advantages, it also raises questions about the evolving roles of accountants and the need for upskilling. This paper explores the evolving skill set required for accountants to harness the full potential of AI and navigate the ethical and regulatory challenges associated with its implementation. In conclusion, the impact of AI in accounting is profound and multifaceted, revolutionizing financial management processes and empowering accountants to play a more strategic role in organizations. As AI continues to evolve, its synergistic partnership with the accounting profession promises to reshape the landscape of financial management in unprecedented ways.

**Keywords:** Artificial Intelligence, Accounting, Financial Management.

# **A Understanding Gap Between Perception and Expectations for Artificial Intelligence**

Besnik Skenderi

UBT, Prishtina, Kosovo

besnik.skenderi@ubt-uni.net

**Abstract.** Artificial intelligence is relatively new concept and it is still developed and updated based on latest technological innovation, while nowadays technology for artificial intelligence exists, the challenge remains with legal issues, ethical issues, trust and skilled workforce to use artificial intelligence. Different vendors like CISCO, Microsoft Google are providing training and professional certifications for artificial intelligence, and in a same time educational institutions like schools and universities are already updating their curriculums with topics from artificial intelligence, the goal of this paper was to identify gap between students' expectation and perception regarding the implementation of artificial intelligence.

**Keywords:** Medical, Aromatic, Plants, Nerodime.

# **IC-CIVIL ENGINEERING, INFRASTRUCTURE AND ENVIRONMENT**

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# Physical and mechanical characterization of gypsummatrix bio-composite

Laércio Mesquita Júnior<sup>1</sup>, Nahúm Gamalier Cayo Chileno<sup>1</sup>, Gabriele Melo de Andrade<sup>1</sup>, Jacinta Veloso de Carvalho<sup>1</sup>, Bruna Lopes Alvarenga<sup>2</sup>, Saulo Rocha Ferreira<sup>1</sup>

<sup>1</sup> Department of Forest Science, Federal University of Lavras, C.P. 37200-900, Lavras, MG, Brazil

<sup>2</sup> Department of Structural Engineering, School of Engineering of the Federal University of Minas Gerais, C.P. 31270-901, Belo Horizonte, MG, Brazil

laerciomjr@gmail.com, nahum.cayo.chileno@gmail.com, andradegm@outlook.com, jacintavelosocarvalho@gmail.com, blosesalvarenga@gmail.com, saulo.ferreira@ufla.br

**Abstract.** The present research aims to assess the physical and mechanical characteristics of gypsum-based bio-composites reinforced with *Eucalyptus urophylla* wood particles. Bio-composites with volume additions of 0%, 25%, and 50% were produced and evaluated. The results of the mechanical tests showed a statistically significant difference among the treatments, with the bio-composite with a 25% particle addition achieving a flexural strength of 2.81 Mpa and a compressive strength of 3.62 Mpa. There was a significant decrease in apparent density as the particle addition increased, with the composite with a 50% particle addition having a density of 0.71 g/cm<sup>3</sup>. All the results met normative requirements, with lower density compared to the control, demonstrating the feasibility of using the bio-composite as it fulfills the mechanical needs with less density.

**Keywords:** *Eucalyptus urophylla*, Sustainable building materials, wood-particles.

# Comparative Analysis of the Impact of Building Regulations on Housing Prices: A Study of Kosovo and Slovenia

Visar Hoxha

Faculty of Real Estate, UBT

visar.hoxha@ubt-uni.net

**Abstract.** This study investigates the impact of building regulations and spatial planning restrictions on housing prices in Kosovo and Slovenia. The research employs a quantitative analysis, utilizing SPSS to analyze 1,468 housing sales and cost transactions in Kosovo and 677 transactions in Slovenia. Findings reveal a significant influence of building regulations on housing prices in both countries, supporting the hypothesis that legal restrictions affect housing prices. The novelty of this study is its comparative approach, shedding light on the effects of regulatory interventions in two different economic and social contexts, which could guide policymakers and real estate professionals towards sustainable and affordable housing.

**Keywords:** Building Regulations, Housing Prices, Spatial Planning Restrictions, Comparative Analysis, Quantitative Analysis, Kosovo, Slovenia

# Disentangling the effect of types of regulatory Interventions on Housing Prices: A Case Study of Kosovo and Slovenia

Prof. Dr. Visar Hoxha

Faculty of Civil Engineering, UBT College, Faculty of Real Estate, UBT

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

**Abstract.** The study aims to quantitatively disentangle the effect of types of regulatory interventions on the housing prices in Kosovo and Slovenia. This research employs a quantitative method, utilizing multiple regression analysis in SPSS to evaluate 2,146 real estate transaction contracts and survey responses from Kosovo and Slovenia, determining the impact of regulatory interventions such as building codes, energy efficiency measures, and zoning regulations on housing prices, with the transactions and responses categorized by period - before and after the implementation of respective building regulations, to compare the influence between the two regions. Regulatory interventions have a significant association with housing prices in both countries, with energy efficiency measures having a positive effect in both countries, and building code and zoning interventions varying in importance. Overall, the study highlights the importance of considering the unique contexts in which regulatory interventions are implemented and provides valuable insights into the effectiveness of these interventions in different contexts.

**Keywords:** Regulatory Interventions, Housing Prices, Kosovo, Slovenia, Building Codes, Energy Efficiency Measures, Zoning Regulations, Construction Costs, Real Estate, Multiple Regression Analysis, Policy Implications, Sustainable Housing, Practical Implementation, Building Permit Approval, Urban Growth.



# THE NEW NZEB HOMES SET BY EUROPEAN AND A CASE STUDY FOR KOSOVO

Kliton Bylykbashi, Besa Veseli, Shqiprim Ahmeti, Visar Krelani, Luca Rubini

UBT, Pristina, Kosovo Institution of Higher Education, UBT-College

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

kliton.bylykbashi@ubt-uni.net

besa.veseli@ubt-uni.net,

shqiprim.ahmeti@ubt-uni.net,

visar.krelani@ubt-uni.net

luca.rubini@cirps.it

**Abstract.** With the new EPBD directive, the European Union has announced the way forward for the construction of new buildings and the renovation of old ones. Kosovo, although not part of the European Union, does not want to fail in the sensitive issues of energy efficiency. In this article, a ZEB model building will be presented, consisting of an excellent passive system (well-insulated walls and windows) combined with a heat pump hybrid, with radiant floor heating, integrated with a photovoltaic system and batteries. This case not only presents a zero- consumption building, but also represents a massive renovation intervention, in fact the building in question was an old ruin redeveloped from scratch. The real case created starts from a project carried out in Italy, in the beautiful area of Val D'Orcia, Tuscany, which is transposed and simulated for the climatic conditions of Pristina, thanks to the dynamic hourly energy simulation of the buildings (FEM, TRNSYS and BIM). This building also integrated two charging stations for the electric vehicle, one low and one high power for charging the electric cars. The energy class of the building is not only maximum A4 or A++ or A0, but the building will be a real case of Zero Energy Building, starting from an obsolete and historic building.

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

# Digitizing Heritage: A BIM-Based Approach to Preserving the “Prishtina District Energy Facility's Chimney Stack”

Feti Selmani, Driton Ibrahim

UBT-University for Business and Technology, Kalabria, 10000 Prishtina, Kosovo

**Abstract.** In the realm of architectural conservation and the digital transformation of the construction industry, Building Information Modeling (BIM) plays a pivotal role in preserving historical landmarks. This paper delves into the practical application of BIM for the revitalization of architectural heritage, focusing on the renowned Chimney Stack at the Prishtina District Energy Facility in Kosovo. Through an in-depth case study, this research explores how BIM facilitates the digitization of existing structures, shedding light on its manifold benefits, challenges, and limitations. Utilizing archival data, qualitative analysis, and a systematic BIM-based digitization process, this study demonstrates how BIM enhances efficiency, safety, sustainability, and maintenance in heritage preservation. The paper emphasizes the importance of accurate data, standardization, interoperability, cost considerations, and specialized training. This paper serves as a comprehensive resource for understanding the practical implications of BIM in the digitization of historical structures, emphasizing its significance in heritage conservation within the architectural and construction domain.

**Keywords:** Building Information Modeling (BIM), digitalization, existing buildings, benefits, challenges, analytic model, structural analysis model

# **The Role of Information in Residential Property Investment Decisions: A Quantitative Analysis in Kosovo**

Visar Hoxha<sup>1</sup>, Perihan Ymeri Ustaibo<sup>2</sup>,

<sup>1</sup> Faculty of Real Estate, UBT

<sup>2</sup> Faculty of Real Estate, UBT

visar.hoxha@ubt-uni.net

perihan.ymeri-ustaibo@eukos.org

**Abstract.** This study provides a comprehensive examination of the determinants influencing residential property investment decisions in Kosovo, with a specific focus on the role of information. Using a combination of statistical analysis techniques on data from 88 respondents, the research uncovers the significant factors affecting investment decisions in the context of Kosovo's real estate market. Results revealed seven critical factors, namely property characteristics, rent and maintenance, parking and heating environments, long-term planning, social influence, online presence, and decision-making aspects, which play pivotal roles in residential property investments.

**Keywords:** Residential Property Investment, Information Role, Decision-Making, Kosovo, Quantitative Analysis, Component Analysis, Multiple Regression.

# Regeneration of the Railway Line in Kosovo: Case Study Kosovo-Prishtina-Podujeva And Prizren-Xërxë

Beni Kizolli, Nol Dedaj, Hazir S. Çadraku, Bekim Selimi

Faculty of Civil Engineering and Infrastructure, UBT-Higher Education Institution, 10000 Prishtina, Republic of Kosovo

\* Corresponding author: [nol.deda@ubt-uni.net](mailto:nol.deda@ubt-uni.net)

**Abstract.** Demographic expansion, urbanization, industrial development, occupation of fertile lands, uncontrolled construction, air, water, soil pollution, health problems, narrowing of areas, recreation, sports, etc. affect the quality of life. Based on these indicators, research was conducted on the analysis of railway infrastructure as a component that will affect the minimization of some problems related to the quality of life in our country in the 2021-2022 period. Based on data, authentic information, and achievable results with this paper we aim to provide knowledge about the railway infrastructure, its condition, potential and the benefits it would have if it were transformed, operated, developed, and managed based on the concept of integrated and sustainable management of the traffic sector. As a result, based on the practices of developed countries, the statistics referred to in the official reports, the factors that have de-functionalized the property located within the urban areas because of the urban transformation and the possibilities of urban-suburban transport development prove that: with the regeneration of the railway on two lines examined in our study properties will be integrated into the urban development. On the one hand, alternative financial resources are provided to the railway company, by operating the facilities for various services, paid parking spaces, commercial advertising, and recreational spaces. On the other hand, alternative transport is provided according to the conditions, transport can be developed with special bus lanes, with Metrobus (Bus Rapid Transit) and along the line within the urban area with bicycle paths.

**Keywords:** Regeneration, Railways, Alternative Transport, Special Lanes for Buses, Metrobuses.

# Identifying the Land Use Land Cover (LULC) changes in Pristina, (Kosova) using “Machine Learning” and “Remote Sensing” techniques

Edon Maliqi<sup>1</sup>, Lulzim Hajdini<sup>2</sup>

<sup>1</sup>Faculty of Architecture and Spatial Planning; UBT – Higher Education Institution, Pristina, Kosova

<sup>2</sup>Faculty of Civil Engineering, Polytechnic University of Tirana, Tirana, Albania

edon.maliqi@ubt-uni.net

lulzim.hajdini@fin.edu.al

**Abstract.** In the last decade, the number of residents living in urban areas has increased rapidly, and in this way green surfaces are being cut more and more. Changes in land use categories, respectively the conversion of vegetated and green lands into urban areas, affects the changes of the Land Use and Land Cover (LULC). Nowadays, the environmental monitoring and assessment can be done easily from the satellites which provide access to the Earth Observations. The present study is aimed to develop the assessment of LULC of Pristina Municipality in Kosova using Geospatial Technologies, precisely Remote Sensing (RS), Machine Learning (ML) and Geographic Information System (GIS). The Remote sensing products were used as input data, including multi-spectral Landsat 5 and Landsat 8 datasets in the raster format with 30m spatial resolution. The analysis were performed for four time series, including 1991, 2001, 2011 and 2021. The data validation process was done through the matrix of confusion, as well as was done the data publishing on a web browser with the intention of visual comparison between time series raster thematic maps. The present approach emphasis the great potential for analysis the Land Use and Land Cover (LULC), in order to meet the goal of the sustainable development in the capital of Kosova, Pristina.

**Keywords:** Land Use Land Cover, Satellite Images, Machine Learning, Thematic Maps.

# Compressive Strength vs Tensile Splitting Strength at 2 and 28 days - an experimental comparative study

Feti Selmani, Butrint Kryeziu, Driton R. Kryeziu

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

**Abstract.** This paper describes an experimental comparative study examining the ratio between compressive strength and tensile splitting strength of concrete at two important curing periods, specifically 2 and 28 days. Concrete's mechanical properties, particularly compressive and tensile strengths, evolve over time, and understanding their relationship at different stages of curing is vital for optimizing concrete mix designs and assessing early-age and long-term performance. Experimental testing procedures following European standards for both compressive and tensile splitting strength at 2 and 28 days are detailed. These tests were performed on a large number of concrete specimens of 150 mm x 150 mm x 150 mm for C25/30 and C30/37, and the results are analyzed to determine the ratio between the two strength parameters at each hardening duration. The findings of this study reveal the dynamic relationship between compressive strength and tensile splitting strength as concrete matures. At 2 days, the ratio may differ significantly from that at 28 days due to the ongoing hydration and development of the concrete matrix. In this study, regression equations are developed to estimate the tensile splitting strengths, which are known as indirect tensile strengths, using the compressive strength of concrete and vice versa. A holistic understanding of these relationships can lead to optimized concrete formulations and enhanced structural integrity in various construction projects. This insight provides valuable information for construction professionals and engineers to assess the early-age performance and durability of concrete structures.

**Keywords:** Concrete, Compressive Strength, Tensile Splitting Strength, Regression Equations.

# Utilizing Freshwater Cooling Injection for Mitigating Saltwater Intrusion and Enhancing Sustainable Groundwater Management

Alban Kuriqi

CERIS, Instituto Superior Técnico, Universidade de Lisboa, Av. Rovisco Pais 1, 1049-001, Lisbon, Portugal

alban.kuriqi@tecnico.ulisboa.pt

**Abstract.** This study examines the intricate relationship between thermal forcing and saltwater intrusion into nearshore aquifers in the context of climate change-induced sea level rise and increasing groundwater withdrawals due to growing demand. Using the SEAWAT code, two case studies were conducted: the Henry problem, which served as a reference scenario, and the Biscayne Aquifer in Florida, USA, a real case study. The simulation scenarios included the base case, sea level rise (SLR) impacts, and inland groundwater recharge reductions. A novel management approach, the strategy of saline water withdrawal, desalination, cooling of desalinated water, and injection into the aquifer (ADCI), was implemented to mitigate SWI in nearshore aquifers. The strategy's effectiveness was evaluated at freshwater temperatures ranging from 25 to 5°C. The results showed that freshwater recharge near the coast is susceptible to temperature fluctuations, resulting in SWI attenuation. The results of this study have significant implications for the sustainable management of groundwater resources in coastal regions to meet the increasing demand for water resources. In particular, salt retention in Biscayne exhibited remarkable variations, reaching +9.80%, +10%, +10.20%, +10.30%, and +10.50% in response to injection

recharge temperature variations of 25, 20, 15, 10, and 5°C, respectively. The study highlights the need to consider thermal regime effects in future planning, design, and development of SWI mitigation measures. In addition, a comprehensive cost-benefit analysis using 3D models is warranted to evaluate the feasibility and economic viability of the proposed method for cooling water supply compared to existing techniques. This research contributes to the scientific understanding of SWI dynamics. It provides insight into sustainable groundwater management practices in coastal areas.

**Keywords:** Thermal forcing, Saltwater intrusion, Nearshore aquifers, Sea level rise, Groundwater management.

# Assesment of Bicycle Sharing Programs from a User Perspective: KAYBIS

Hatice Göçmen Demir<sup>1</sup>, Y.Kağan Demir<sup>2</sup>, Anıl Uruç<sup>2</sup>

<sup>1</sup> Asst. Prof., Nigde Omer Halisdemir University, Nigde Turkey, e-mail: hgocmen@gmail.com,

<sup>2</sup> Asst. Prof., Nigde Omer Halisdemir University, Nigde Turkey Asst. Prof., e-mail: ykdemir@gmail.com

<sup>3</sup> M.S. Std., e-mail: aniluruc@hotmail.co

**Abstract.** Bicycles are highly preferred as an efficient means of transportation today, particularly in terms of sustainability. There are currently over 1000 Bicycle Sharing Programs (BSPs) worldwide that are organized to promote the use of bicycles with individual or public transportation in an integrated manner. The first implemented BSP in Turkey is known as KAYBIS, and many other cities are also considering or planning similar programs. However, the availability of information and user statistics related to KAYBIS does not clearly indicate the level of adoption of BSP by users. In this study, the factors influencing users' preferences for KAYBIS were determined and evaluated. This was conducted through an online survey where users answered questions related to bicycle sharing. The results obtained will serve as the basis for user-based conjoint questions in a future study titled 'User KAYBIS Preference Modeling.' This will contribute to gaining insights for the improvement and development of the BSP program.

**Keywords:** BSP, KAYBIS, User-Based Conjoint Questions



# **Identification of the landslide area on the sideslopes on the Suhareke-Prizren Highway by applying the Global Mapper software**

Hysen Ahmeti

Faculty of Civil Engineering (Construction) and Infrastructure in Pristina, Republic of Kosovo

hysen.ahmeti@ubt-uni.net

**Abstract.** Global Mapper is an advanced and easy-to-use software for processing data from Google Earth, Autocad, Surfer, Gis, etc. Global Mapper offers a variety of tools for editing and analyzing terrain data. There are also tools for computing information from terrain data based on vector features and creating vector features from terrain data. Analysis methods for this type of data can also be applied to other raster data that contain values that represent a measurement or phenomenon other than elevation, such as contour generation, create points at the centers of elevation grid cells, measure volume between surfaces, Generate a 3D road profile from a selected line or area feature, road profile with Lidar data, Calculate elevation/slope statistics for selected feature(s), etc.

**Keywords:** Identification, Landslide, software application

# The Utilization of Recycled Asphalt as An Environmental Responsibility

Muhamet Ahmeti, Blerta Retkoceri

UBT- Faculty of Civil Engineering, Str.Kalabria p.n, Prishtina, Kosova

muhamet.ahmeti@ubt-uni.net

blerte.retkoceri@ubt-uni.net

**Abstract:** The use of recycled asphalt appears as a major environmental duty in light of growing environmental concerns and the need to lessen the ecological impact of infrastructure construction. This study explores the various facets of using recycled asphalt in techniques for building and maintaining roads. It examines how to lessen negative environmental effects including greenhouse gas emissions and the depletion of fossil fuel-based resources by using recycled waste materials and cutting-edge technologies into asphalt pavement. The study places special emphasis on the functions played by citizens, companies, states, and local governments in advancing legislation that promotes the recycling of road trash and the widespread use of recycled asphalt. It emphasizes how the protection of the environment, economic viability, and improved performance are all interconnected benefits, offering recycled asphalt as a responsible and creative substitute for creating and maintaining road infrastructure. Reclaimed Asphalt Pavement (RAP), which is made from dismantled flexible pavements, is also examined in the study, and its potential to replace virgin aggregates in concrete pavements is assessed. RAP's potential as a sustainable substitute for primary materials can be better understood by comparing its strength and durability to that of conventional cement. This study emphasizes the environmental responsibility connected to the use of recycled asphalt, reiterating the role it plays in fostering a culture of environmental awareness.

**Keywords:** Recycled asphalt RAP, Environmental duty, Environmental concerns, Ecological impact, Infrastructure construction, Road construction

# **Water Utility Asset Management The Case of the “Prishtina Regional Water Company” J.S.C**

Illir Avdullahu, Andrin Kerpaci

**Abstract.** Many of today’s water utility managers face the challenge of cutting their unacceptably high levels of nonrevenue water. Regional Water Company Prishtina, unbilled water reached the level of 56% Aside from decreasing revenue, money for investment, productivity, and service delivery, nonrevenue water also increases the cost of the delivered water. In addition to reducing nonrevenue water, water utility managers must (i) raise their service levels closer to 24 hours a day, 7 days a week, to meet the expectations of households, commerce, and industry;(ii) expand distribution networks to cope with population growth;(iii) finance the timely replacement and maintenance of existing assets; and (iv) treat heavilypolluted water. The way an organization manages its assets determines its success in addressing these challenges. A utility can improve and sustain the expected level of service, reduce water losses, cut unit costs, and fairly justify tariff rates if it knows what assets it has and needs, whenand how to maintain or replace those assets, and how the assets should be operated.

**Key Words:** Pipe, Fitings, Rezervori, Manhol

# Assessing the influence of cellulosic pulp replacement with polypropylene on cement matrix properties

Ianca Oliveira Borges, Jacinta Veloso de Carvalho, Jhonatan Sales Satiro, Gabriele Melo de Andrade<sup>1</sup>, Marisa Aparecida Pereira, Saulo Ferreira Rocha, Gustavo Henrique Denzin Tonoli

<sup>1</sup>Department of Forest Science, Federal University of Lavras (UFLA), C.P. 37200-900,

{iancaborges@hotmail.com, jacintavelosocarvalho@gmail.com, jhonatansatiro@studioburgo.com, andradegm@outlook.com, marisa.pereira1@estudante.ufla.br, saulo.ferreira@ufla.br, gustavotonoli@ufla.br}

**Abstract.** Cellulosic pulp is widely used in the production of cement composite due to its sustainable characteristics, availability and low cost. To improve durability and mechanical properties, synthetic fibers such as polypropylene (PP) are added to the matrix. In this study, fiber cements were reinforced with 1.4% PP fibers, replacing Kraft pulp at concentrations of 5% and 10% in relation to the cement mass. The performance of the cementitious composites was evaluated after 28 days age and 200 cycles of accelerated aging. The results showed that the combination of PP fibers with Kraft pine pulp is a viable option for the production of fiber cement, resulting in significant improvements in crack resistance. The presence of PP fibers increased the flexural strength (MOR), reaching 10 MPa for the PNB3.6%PP1.4% treatment. Furthermore, there was an improvement in toughness and a decrease in porosity and water absorption with the replacement. These fibers play a crucial role in improving the mechanical and physical properties of cementitious composites.

**Keywords:** Durability, synthetic fibers, accelerated aging, Kraft pulp.

# The new EPBD directive and the situation of green houses in Kosovo. A case study

Kliton Bylykbashi, Besa Veseli<sup>1</sup>, Visar Krelani

<sup>1</sup>UBT, Pristina, Kosovo Institution of Higher Education, UBT-College  
Sapienza University, Roma, Italia

kliton.bylykbashi@ubt-uni.net, besa.veseli@ubt-uni.net,

**Abstract.** With the "green houses" directive, the European Union intends to reduce harmful gasses emissions by 55% to 2030 compared to 1990 levels and achieve zero emissions by 2050. Reducing emissions of polluting gases and fighting global warming are two objectives of the utmost importance for Europe, pursued through a policy that encourages the ecological transition. One of the most discussed interventions in this sense is the so-called Green Homes Directive or the EPBD Directive which aims to gradually eliminate buildings with inadequate energy performance by promoting the redevelopment of energy-intensive buildings. How can Kosovo respond to this objective at this moment? This article will address the dimensioning of a building to be renovated, respecting the European parameters. The building will be zero consumption, composed of an excellent passive project (thermal insulation of the opaque walls and windows), optimal system design (low temperature generation systems, photovoltaic systems, charging for the electric car) and by an excellent system for monitoring and managing the building's thermal and electrical loads.

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

# Groundwater flooding-Case study Republic of Kosovo

Hazir S. Çadraku

Faculty of Civil Engineering and Infrastructure, UBT-Higher Education Institution, 10 000, Prishtinë,  
Republic of Kosovo

hazir.çadraku@ubt-uni.net

**Abstract.** Groundwater flooding is defined as a temporary process of the rise of the water table results near or above the Earth's surface, while the mechanisms are different from river floods, both spatially and temporally. Since the entry into force of the Flood Directive 2007/60/EC of the European Parliament and of the Council, groundwater flooding risk has drawn increased attention in Europe. The Directive creates a framework for the assessment and measures to be taken to reduce the risk of floods and to draw up plans for their management. This article addresses with developments related to groundwater flooding in the territory of the Republic of Kosovo. The study highlighted that a significant number of areas in the territory of Kosovo are affected by groundwater flooding

**Keywords:** Groundwater flooding, Directive, Mechanisms, Kosovo.

# Evaluation of the oxidation process of steel fibers in the presence of a potato dextrose and calcium chloride solution for the self-healing of cementitious matrices

Nahúm Gamalier Cayo Chileno<sup>1</sup>, Gabrielle Avelar Silva<sup>2</sup>, Laércio Mesquita Júnior<sup>3</sup>, Saulo Rocha Ferreira<sup>3</sup>, Maria Alves Ferreira<sup>2</sup>, Joaquin Humberto Aquino Rocha<sup>4</sup>, Jacinta Veloso de Carvalho<sup>1</sup>, Gabriele Melo de Andrade<sup>1</sup>

<sup>1</sup> Department of Forest Science, Federal University of Lavras(UFLA), C.P. 37203-202, Lavras MG, Brasil

<sup>2</sup> Department of Phytopathology, Federal University of Lavras(UFLA), C.P. 37203-202, Lavras MG, Brasil

<sup>3</sup> Department of Engineering, Federal University of Lavras (UFLA), C.P. 37203-202, LavrasMG, Brasil

<sup>4</sup> Civil Engineering Program, Federal University of Rio de Janeiro (UFRJ), C.P.21941-909 Riode Janeiro, Brasil.

{[nahum.cayo.chileno@gmail.com](mailto:nahum.cayo.chileno@gmail.com), [gabrielleavelar.engflorestal@outlook.com](mailto:gabrielleavelar.engflorestal@outlook.com), [laerciomjr@gmail.com](mailto:laerciomjr@gmail.com), [saulo.rocha@ufla.br](mailto:saulo.rocha@ufla.br), [maria.ferreira@ufla.br](mailto:maria.ferreira@ufla.br), [joaquinaquino-rocha@gmail.com](mailto:joaquinaquino-rocha@gmail.com), [jacintavelosocarvalho@gmail.com](mailto:jacintavelosocarvalho@gmail.com), [andradegm@outlook.com](mailto:andradegm@outlook.com)}

**Abstract.** The objective of the research was to experimentally examine the corrosion of steel fibers in two media: a solution containing potato dextrose and calcium chloride (S1) (nutrient of the biological agent *Oomicetum Pythium aphanidermatum* that facilitates the self-healing of cementitious matrices), and water (S2). The corrosion process was accelerated by the Cebelcor method for 15 days, with immersion/emersion cycles of 5 and 19 hours, respectively. The results revealed that the corrosion of the fibers in solution S1 was 10.64% higher than that in S2. Regarding cross-sectional loss, the corroded fibers in S2 showed linear behavior, unlike those in S1, which exhibited pitting corrosion that varied along their longitudinal section. Therefore, it is recommended that future investigations evaluate this behavior using the galvanostatic method. Additionally, future research should evaluate the mechanical response of steel fiber-reinforced cementitious matrices incorporating self-healing mechanisms through the biological agent and its corresponding nutrient.

**Keywords:** Corrosion, Steel fiber, Self-healing, Solution.

# Mimicking Nature: Mini Vascular Networks for Self-healing Lime-based Mortars

Cristina De Nardi\*, Diane Gardner, Antony Jefferson

Cardiff University, Queen's Building, Cardiff CF24 3AA, United Kingdom

denardic@cardiff.ac.uk

**Abstract.** As climate change exposes heritage buildings to increasingly severe and unprecedented risks, it is crucial to improve the methods used for repairing historic masonry. This adaptation is essential to support a resilient, long-term preservation strategy. Drawing inspiration from research on mini-vascular networks that enable self-healing in concrete structures, this study suggests employing biomimetic mini-mini vascular networks (m-MVNs) to repair cracks in lime-based mortars. m-MVNs consist of interconnected channels created through 3D printing, designed to securely store and protect healing agents. These agents are released only when the damage exceeds a predefined threshold. In situations where the restoration of historic masonry walls is required, the m-MVN design ensures seamless integration within the mortar joints. Preliminary findings indicate that m-MVNs created from transparent PLA show promising results, effectively storing healing agents without any issues of leakage or premature curing.

**Keywords:** biomimicry in construction, self-healing, built heritage, lime-based mortars.



# Strengthening of existing structures – Case study ‘Hotelon Pashko Vasa street N<sup>o</sup>51, Prishtina’

Egzon Sinanoviç, Arsim Rapuca

Faculty of Civil Engineering and Infrastructure, “University of Business and Technology”, Prishtina, Republic of Kosovo

**Abstract:** Existing building structures have always been a topic of concern for owners, stakeholders, engineers and researchers, considering different motives and interests. In addition to socio-economic, political, aesthetic and cultural reasons, the role of structures in any existing construction can be, or should be, the main issue when dealing with preservation and/or rehabilitation of all heritage buildings. However, when structural reconstruction is required or imposed due to any type of phenomenon such as changes in the configuration, modification or use of the structure, reconstruction may be unavoidable. It is clear that this issue is extremely broad, in the sense that interventions are highly dependent on a large number of different conditions and factors, for example, structural strengthening due to increased loads resulting from modification of use may lead to interventions other than those required to meet design requirements. Furthermore, access to existing structures is still an issue that requires special attention in current design practice; in fact, it is common that the design of the reinforcement project for existing structures in accordance with the relevant standards may become practically or economically unfeasible. Last, often types of reinforcement techniques can be proposed in its design, for which the designer can face difficulties in evaluating them to choose a more rational option. The purpose of this paper was the case study in question, where the critical questions and possible solutions were highlighted through it. The relevant information of the existing structure is collected mainly through various destructive and non-destructive testing. The tests provided, among other things, a lot of input regarding experiences or practices in reinforcement methods. The knowledge gathered from the tests was essential information about reinforcement methods. Then, taking into account the architectural aspects, different methods were selected and further evaluated through supplementary calculations. The results of the case study show that there are many aspects to consider, but also that many solutions are available with the development of new working techniques and types of materials.

**Keywords:** existing structures, retrofitting, structural reinforcement methods, early design phase, (non)destructive tests

# The Effect of Nano-Alumina on the Performance of Self-Compacting Geopolymer Concrete Reinforced with Micro-Steel Fibers

Eman Hasan Raheem, Haider M. Owaid

College of Engineering, University of Babylon, Hillah, Babylon, Iraq

eman.raheem.engh355@student.uobabylon.edu.iq

eng.haider.ma@uobabylon.edu.iq

**Abstract.** This article discusses the impact of using nano-alumina (NA) in micro-steel fiber- reinforced self-compacting geopolymer concrete (SCGPC) based on calcined kaolin clay (CKC). Three SCGPC mixes were created using NA in 1%, 2%, and 3% ratios as a partial replacement for CKC, while another mix without NA was also produced. All mixes had a constant total binder amount of 484 kg/m<sup>3</sup> and a fixed quantity of micro-steel fibers of 0.5% by volume. The fresh characteristics were assessed by slump flow, V-funnel, and L-box tests. Additionally, the study assessed the compressive and flexural strengths, porosity, and water absorption at 28 days after 24 hours of oven curing. Results revealed that the fresh characteristics were negatively affected by the addition of NA. However, it was found that 2.0% of NA was the optimal amount that provided the maximum flexural and compressive strengths, lower porosity, and considerably increased the sample's resistance to water absorption.

**Keywords:** Calcined Kaolin Clay, Nano-Alumina, Self-Compacting Geopolymer Concrete, Sustainability

# Dynamics of Simply Supported Beam Members Subject to Vertical Seismic Acceleration

Francesco Foti<sup>1\*</sup>, Bruno Dal Lago<sup>2</sup>, Luca Capacci<sup>1</sup>

<sup>1</sup>Dept. of Civil and Environmental Engineering, Politecnico di Milano, Italy

<sup>2</sup>Dept. of Theoretical and Applied Sciences, University of Insubria, Italy

francesco.foti@polimi.it  
luca.capacci@polimi.it  
bruno.dallago@uninsubria.it

**Abstract.** Despite in most cases vertical seismic acceleration is disregarded in practical structural design, mainly due to the uncritical actions of the pertinent load combination, current standards prescribe the structural check of long-span and pre-stressed beam members subjected to vertical acceleration when they are located in high seismic hazard areas. Current design approaches focus on either finite element calculation, which does not provide a logical guidance to the designer for the problem, or, alternatively, on simplified calculations typically assuming lumped masses concentrated at midspan of the horizontal member. The latter approach does provide only an indicative solution affected by arbitrary modelling choices, which may bias the final design. This issue may become critical for precast pre-stressed concrete beams and roof elements, which are characterised by contemporary large slenderness, span, and mass. The present paper aims at describing a rigorous solution of the linear dynamics of such elements subject to vertical seismic acceleration in elastic field, accompanied by useful design recommendations based on parametric analysis.

**Keywords:** vertical acceleration, earthquake response, linear dynamics, beam members.

# On the assessment of aeolian vibrations of damped electrical conductors

Francesco Foti\*, Stefano Corazza, Luca Martinelli

Dept. of Civil and Environmental Engineering, Politecnico di Milano, Italy

[francesco.foti@polimi.it](mailto:francesco.foti@polimi.it)

**Abstract.** Conductors and guard wires of overhead transmission lines are very sensitive to vortex-induced vibrations. Such phenomenon, also known as “aeolian vibrations” in the community of transmission line engineers, has been since long recognized as a major cause of wear damage and fatigue failures of both conductors and other line components. Passive dissipation devices, such as Stockbridge dampers, are typically installed to mitigate aeolian vibrations.

Stockbridge dampers are characterized by a markedly nonlinear dynamic behavior and a significant variability of their mechanical properties, which makes their modeling a challenging task. A simple reduced-order dynamic model has been recently developed within the authors’ research group, starting from an application of the Bouc-Wen phenomenological hysteretic model. The damper model has been then used along with an application of the Energy Balance Method to assess the severity of aeolian vibrations within a deterministic framework.

The present paper discusses the effect of the uncertainties related to the damper model parameters on the predicted values of aeolian vibrations and their impact on the efficiency of the damping device.

# Experimental Study of Hysteretic steel damper forenergy dissipation capacity

Ferit Gashi<sup>1</sup>, Francesco Petrini<sup>2</sup>, Franco Bontempi<sup>3</sup>

(3) Professor, Department of Structural and Geotechnical Engineering, SapienzaUniversity of Rome E-mail: [Franco.Bontempi@uniroma1.it](mailto:Franco.Bontempi@uniroma1.it)

(2) Assistant Professor, Department of Structural and Geotechnical Engineering, Sapienza University of Rome E-mail: [Francesco.petrini@uniroma1.it](mailto:Francesco.petrini@uniroma1.it)

(1) Department of Structural and Geotechnical Engineering, Sapienza University ofRome E-mail: [Gashi.1670547@studenti.uniroma1.it](mailto:Gashi.1670547@studenti.uniroma1.it), [Ferittgashi@gmail.com](mailto:Ferittgashi@gmail.com)

**Abstract.** This paper summarizes the experimental campaign carried out for the development of a new steel energy dissipative device named Slit Dampers (SDs) designed for earthquake protection of structures. SDs consist in shear steel plates with appropriately shaped cut-out portions of material for allowing the maximum spread of plastic deformation along the device and then maximizing the hysteretic dissipative behavior. A total of eighty-two steel shear plates with different openings and thicknesses are tested to investigate their behavior under cyclic pseudo-static loading. Six types of steel shear plates are studied, including the SD with narrow slits that divide the plate into rectangular links, and the butterfly fuse with a diamond-shaped opening that creates butterfly shape links in the plate. Other varying test parameters are loading rate, material strength, and the number of in-parallel damper elements. It is expected that the proposed model can be successfully used to predict the behavior of dampers in real-world applications.

**Keywords:** Experimental, Energy dissipation, Cyclic load, Metallic damper, Hysteresis Model, etc

# Integrating Rubber Additives From End-Of-Life Tyres Into Concrete: A Circular Approach To Sustainable Building Materials

Girts Kolendo, Aleksandrs Korjakins, Gendijs Sahmenko, Diāna Bajāre

Riga Technical University, Institute of Materials and Structures, Kipsalas iela 6BRīga, Latvia

Girts.Kolendo@edu.rtu.lv

**Abstract.** End-of-life car and truck tyres (ELTs) pose a global environmental challenge. To align with the European Union's circular economy vision, we investigate the addition of rubber additives to concrete. Traditionally, rubber crumb in large quantities weakens the concrete. Our study differentiates between rubber crumb size and admixture dosage, revealing the potential for rubber devulcanization. By repurposing ELTs into construction materials, we bridge sustainability with energy efficiency, echoing the "Energy Efficiency and Building Materials" conference theme. This research offers a practical example of circular economy principles in action, addressing ELT waste while enhancing building material sustainability.

**Keywords:** Circular economy, End-of-life tyres, Rubber additives, Sustainability, Building materials

# The use of thermal power plant ash as an additive in cement production

Ibush Luzha<sup>1</sup>, Bujar Aliu<sup>2</sup>

<sup>1</sup>UBT-Faculty for Civil Engineering and Infrastructure,  
<sup>2</sup>SHARRCEM

Ibush.Luzha@ubt-uni.net  
Bujar.Aliu@sharrcem.com

**Abstract:** The use of power plant ash as an additive in cement production is a common practice in the Construction Industry. Ash, as a product of burning coal in power plants to produce electricity, can be used as an additive in cement production. Fly ash has several beneficial properties for cement production. One of these characteristics is the high content of Calcium Oxide (CaO) and Silicon Dioxide (SiO<sub>2</sub>), which are important components of cement. Power plant ash can be used in various ways in the production of cement. A common use is to replace part of power plant ash additives. Ash can improve the quality of cement, affecting its reinforcement and other physical characteristics. This can lead to the production of more durable and better-quality materials for building structures. The use of fly ash can reduce the cost of cement production, as it helps reduce the amount of higher-cost additives. This can be advantageous for the construction industry and cement consumers. It is important to note that the use of fly ash in cement production must be done carefully and follow cement quality standards and guidelines. It is also necessary to monitor the effect of the use of power plant ash on the quality and performance of cement in construction projects.

**Keywords:** Ash, Cement, Coal, Construction material, Thermal power plant

# Digital Technology Impact on Sustainable Development with Focus on Research and Innovation in Engineering Enterprises

Ylber Limani, Visar Krelani, Blertë Retkoceri, Xhesika Hasa

UBT, Prishtina, Kosovo

ylber.limani, visar.krelani, blerte.retkoceri, [xh64501@ubt-uni.net](mailto:xh64501@ubt-uni.net)

**Abstract.** The purpose of this paper is to investigate and discuss the impact of digital technology on sustainable development, with an emphasis on research and innovation in engineering enterprises. The intensification of digital technology applications is distressing the way enterprises and organizations used to apply sustainable development practices in their organizational processes. This research will be focused on the impact of digital technologies on research and innovation within the context of sustainability practices. Thereby, it is suspected that even engineering companies have been significantly influenced by digital technologies in many aspects, specifically in the research and innovation domain. Additionally, this research aims to find out how high this impact is and what the challenges and opportunities offered by digital technology are in the context of research and innovation in various organizations, specifically in engineering companies. The applied research methods are combined and based on trends, literature, case studies, and a survey conducted with local engineering companies.

**Keywords:** Digitalization, Sustainable Development, BIM, Artificial Intelligence, Research, Innovation, Modular Building Systems, Robots, Drones.



# Comparative study of the mineralogical phase composition and particle morphology of fly ash and phosphogypsum

Jabulani Matsimbe<sup>1, 2, 3\*</sup>, Megersa Dinka<sup>1</sup>, David Olukanni<sup>4</sup>, Innocent Musonda<sup>2</sup>

<sup>1</sup>Department of Civil Engineering Science, Faculty of Engineering and the Built Environment, University of Johannesburg, Johannesburg 2006, South Africa

<sup>2</sup>Centre for Applied Research and Innovation in the Built Environment (CARINBE), Faculty of Engineering and the Built Environment, University of Johannesburg, Johannesburg 2092, South Africa

<sup>3</sup>Department of Mining Engineering, Malawi University of Business and Applied Sciences, P/Bag 303, Chichiri, Blantyre3, Malawi

<sup>4</sup>Department of Civil Engineering, Covenant University, 10 Idiroko Road, Ota, Ogun State, Nigeria

\* Correspondence: [jmatsimbe@poly.ac.mw](mailto:jmatsimbe@poly.ac.mw)

**Abstract.** The mineralogical phase composition and particle morphology of fly ash and phosphogypsum vary depending on the region source, surface properties, and plant performance. However, very limited studies on the mineralogy and morphology of South African fly ash and phosphogypsum have been conducted. The present study comparatively investigates the particle morphology and mineralogical phase composition of South African fly ash (FA) and phosphogypsum (PG) in unary form. X-ray Diffractometer (XRD) and Scanning Electron Microscope fitted with an Energy-Dispersive X-ray Spectrometer (SEM-EDS) were used to examine the mineralogical phase composition and particle morphology. The findings show that the main mineral phases of the FA are mullite ( $\text{Al}_{4.68}\text{Si}_{1.2}\text{O}_{9.6}$ ) and quartz ( $\text{SiO}_2$ ), and that of PG is gypsum ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ). Phosphogypsum has a well-defined rhombic and hexagonal dense crystalline structure while fly ash has smooth round and spherical-shaped glassy particles. The waste materials (FA and PG) are chemically reactive for use to produce cementitious products. This study discovers valuable metals and oxides in fly ash and phosphogypsum with potential benefits for sustainable construction applications.

**Keywords:** Composite, microstructure, materials characterization, recycled waste, spectroscopy

# Leaching properties of fly ash from Duvha powerstation in South Africa

Jabulani Matsimbe<sup>1, 2, 3\*</sup>, Megersa Dinka<sup>1</sup>, David Olukanni<sup>4</sup>, Innocent Musonda<sup>2</sup>

<sup>1</sup>Department of Civil Engineering Science, Faculty of Engineering and the Built Environment, University of Johannesburg, Johannesburg 2006, South Africa

<sup>2</sup>Centre for Applied Research and Innovation in the Built Environment (CARINBE), Faculty of Engineering and the Built Environment, University of Johannesburg, Johannesburg 2092, South Africa

<sup>3</sup>Department of Mining Engineering, Malawi University of Business and Applied Sciences, P/Bag 303, Chichiri, Blantyre3, Malawi

<sup>4</sup>Department of Civil Engineering, Covenant University, 10 Idiroko Road, Ota, Ogun State, Nigeria

\* Correspondence: [jmatsimbe@poly.ac.mw](mailto:jmatsimbe@poly.ac.mw)

**Abstract.** Fly ash and phosphogypsum are abundantly available in South Africa. However, landfilled industrial waste materials interact with the environment leading to groundwater, air, and soil pollution. This study aims to determine and quantify the heavy metal concentrations in fly ash from the Duvha power station and compare the results with US EPA regulatory limits. The TCLP and ICP-MS methods are used for leachate measurements. The results showed that the fly ash can be considered non-hazardous since the amounts of toxic elements such as Hg, Pb, Cu, Cd, Zn, Ni, As, P, Co, Se, and Mn are below the US EPA limits. The study findings can help policymakers manage fly ash disposal and/or management thereby reducing the environmental impact.

**Keywords:** Heavy metals, waste management, supplementary cementitious materials

# Coffee Husk Biomass: A Sustainable Solution for Eco-Friendly Bioconcrete with Enhanced Thermal Insulation

Jacinta Veloso de Carvalho<sup>1</sup>, Gabriele Melo de Andrade<sup>1</sup>, Selwinn Augusto Anselmo Moreira da Silva<sup>2</sup>, Ianca Oliveira Borges<sup>1</sup>, Nahúm Gamalier Cayo Chileno<sup>1</sup>, Jhonatan Sales Satiro<sup>1</sup>, Marisa Aparecida Pereira<sup>1</sup>, Saulo Rocha Ferreira<sup>2</sup>

<sup>1</sup> Department of Forest Science, Federal University of Lavras (UFLA), C.P. 37200-900, Lavras, MG, Brazil

<sup>2</sup> Department of Engineering, Federal University of Lavras (UFLA), C.P. 37200-900, Lavras, MG, Brazil

{[jacintavelosocarvalho@gmail.com](mailto:jacintavelosocarvalho@gmail.com), [andradegm@outlook.com](mailto:andradegm@outlook.com), [selwinn.silva@estudante.ufla.br](mailto:selwinn.silva@estudante.ufla.br), [iancaborges@hotmail.com](mailto:iancaborges@hotmail.com), [nahum.cayo.chileno@gmail.com](mailto:nahum.cayo.chileno@gmail.com), [jhonatansatiro@studioburgo.com](mailto:jhonatansatiro@studioburgo.com), [marisa.pereira1@estudante.ufla.br](mailto:marisa.pereira1@estudante.ufla.br), [saulo.ferreira@ufla.br](mailto:saulo.ferreira@ufla.br)}

**Abstract.** Coffee husk resulting from crop processing are farm waste, generating a large amount of these organic materials after processing. Brazil, as the largest producer and consumer of coffee in the world, generates a significant amount of solid waste, approximately 4 million tons of coffee waste in 2020. Due to the low environmental impact of these materials, there are ecological alternatives for production of bioconcrete, creating lighter and more cost-effective materials, adding value to the waste and materials developed. The research evaluated the mechanical and physical properties of bioconcrete together with pozzolanic material, completely upgrading conventional aggregates with coffee husk biomass. The material showed low mechanical resistance to compression, with average values of 1.89 MPa, as expected due to its low density, making it unsuitable for structural purposes, but suitable for sealing. Furthermore, the material has a low thermal conductivity of 0.52 W/m•K, making it a viable option for the development of thermal insulating panels.

**Keywords:** GMOs, GMO FREE, Agrastrip® GMOs - Romer labs®, Corn, Soy

# Challenges Encountered in OBD2 Data for Driving Cycle

Yusuf Kagan Demir<sup>1</sup>, Flamur Salihu<sup>\*2</sup>

<sup>1</sup>Niğde Ömer Halisdemir University, Civil Engineering Department / NİĞDE, Turkey

<sup>2</sup>University of Applied Sciences in Ferizaj, St. Universiteti, p.n., Ferizaj, Kosovo

\* Corresponding author e-mail ([flamur.salihu@ushaf.net](mailto:flamur.salihu@ushaf.net))

**Abstract.** Integrated vehicle emission modelling has been a main problem by many authors recently as the complexity of transportation system in urban areas has increased significantly. However, current models such as MOVES require driving cycle for emission predictions. Driving cycle, in addition to reflecting the behavior of the driver, is a speed-time curve that also captures the physical state of the urban network and traffic conditions. Due to the volume of data, the calculation of this curve from second-based data collected from drivers becomes a big data problem. This study summarizes a series of challenges and solutions, including the collection, cleaning, and grouping of second-based OBD2 data. In a driving cycle study conducted for the city of Pristina, it was observed that a significant portion of the collected data could not be used due to missing location data caused by GPS signal loss. Additionally, it was observed that GPS signals deviate due to reflection effects, and data needs to be corrected using matching algorithms.

**Keywords:** Driving cycle, real data measurements, OBD, speed-time profile, Pristina.

# Experimental evaluation of damage and stress rate in concrete during compression test using ultrasonic Investigation.

Bachir Kebaili<sup>1</sup>, Mohammed Benzerara<sup>2</sup>

Civil Engineering Laboratory, Faculty of Technology, Badji Mokhtar-Annaba University, P.O. Box 12, 23000 Annaba, Algeria

[bachir.kebaili@univ-annaba.dz](mailto:bachir.kebaili@univ-annaba.dz)

**Abstract.** The relationship between concrete pulse velocity and compressive stress at various levels was explored. Under compression, the UPV and damage measured showed that the UPV curve has a stable trend until 60% of the ultimate stress, a declining trend begins until failure occurs. This trend may be used to replicate the progression of the concrete's damage curve. The applied load causes matrix microcracks, which is the major source of the increase in concrete specimen damage. Failure is caused by the instability and penetration of the macrocracks. The data from each test was examined to predict strength using Ultrasonic Pulse Velocity and compared to the experimental strength measured and determined. Eurocode was used to create empirical relationships between concrete compression strength and strain module. It was determined that indirect, non-destructive concrete testing may be evaluated using lost cost. The stress state and damage can be assessed by the loss of UPV.

**Keywords:** Concrete, Dynamic Modulus, UPV, loss.

# **Peculiarities in Serviceability Limit State design of reinforced concrete structures subjected to restraint-induced cracking**

Agnieszka Jędrzejewska

Silesian University of Technology, Department of Structural Engineering, Akademicka 5,  
44-100 Gliwice, Poland

Agnieszka.Jedrzejewska@polsl.pl

**Abstract.** The models for crack width control in the elements where cracking is caused by the restraint of imposed strains are adopted from the models for the elements under direct tension. The practice has shown, however, that the general models for crack width control do not always correctly predict the crack width when cracking is caused by the restraint of imposed strains. This results from the fact that by using these calibrated models their predictive capacity decreases as the characteristics of the analysed structure deviate from the characteristics of the elements in the calibration database. This work discusses peculiarities in crack width estimation in special structures, characterised with untypical features, such as high massivity, low degree of reinforcement or large concrete cover.

**Keywords:** Imposed Deformations, Restraint, Cracking, Reinforced Concrete, Design Standards

# **Bio aggregates development: Phase change material incorporation in wood particles porosity for buildings**

Leonardo Seibert Kuhn, Fabricio Resende Fontenelle, Tulio Caetano Guimaraes, Saulo Rocha Ferreira

Federal University of Lavras, Department of Science Forest, Lavras, Minas Gerais, Brasil

Leonardo.kuhn@estudante.ufla.br,  
fabricio.fontenelle@estudante.ufla.br,  
tulio.guimaraes2@estudante.ufla.br  
saulo.ferreira@ufla.br

**Abstract.** The aim of this work was to develop a bio aggregate with energy efficiency capability. For this work, wood particles with low density was obtained, then, phase change material (PCM) was incorporated into the wood porosity by immersion, after saturation, coating process was performed with carboxylated styrene butadiene rubber. The bio aggregates was applied in cement matrix and thermal analysis was performed, the results show the PCM effect, which promote thermal and energy efficiency, being suitable to be applied in buildings. Further research is ongoing to improve the bio aggregate production and evaluate the physical and mechanical properties not productivity and substrate consumption (glucose) using computer simulation for different

**Keywords:** PCM., Biomass, Energy efficiency, Composite

# Splitting Tensile Strength Prediction Using Machine Learning Based Optimization Algorithms

Lukesh Parida<sup>1</sup>, Sumedha Moharana<sup>2</sup>, Sourav Kumar Giri<sup>3</sup>

<sup>1</sup>Department of Civil Engineering, Shiv Nadar Institution of Eminence, Uttar Pradesh, Dadri, India, 201314

<sup>3</sup> School of Computer Engineering, KIIT Deemed to be University, Bhubaneswar, Patia, India, 756001

**Abstract.** The usage of recycled aggregates in construction materials has received a lot of interest because of its potential to minimize environmental consequences and the loss of natural resources. The prediction of splitting tensile strength, a crucial mechanical attribute determining structural performance, is an integral part of assessing the feasibility of recycled aggregates for construction. Traditional techniques for evaluating the splitting tensile strength of recycled aggregates rely on advanced and time-consuming laboratory testing, which maybe costly and inefficient for large-scale applications. This work proposes machine learning-based algorithms for predicting the performance of splitting tensile strength. In this research, 257 data points were collected from a previous study containing input variables affecting split tensile strength. Three methods were used to build different predictive models, i.e., support vector regression, XG boost, and random forest. The performance indices of various models were evaluated using metrics like MAE, RMSE, MAPE, and MASE to measure the models' accuracy and reliability. This research indicates that XG boost algorithms outperform other models with RMSE value of 1.26. The implementation of proposed models improves the reliability of predictions, allowing researchers to make informed decisions about incorporating recycled materials in sustainable construction practices, thereby contributing to the reduction of environmental impacts in the construction sector.

**Keywords:** Splitting Tensile Strength, Machine Learning, Recycled Aggregates, Sustainability, Prediction



# Comparative Assessment Using Machine Learning Algorithms for Ultimate Bond Strength Estimations

Lukesh Parida<sup>1</sup>, Sumedha Moharana<sup>1</sup>, Sourav Kumar Giri<sup>2</sup>

<sup>1</sup>Department of Civil Engineering, Shiv Nadar Institution of Eminence, Uttar, Pradesh, Dadri, India, 201314

<sup>2</sup>School of Computer Engineering, KIIT Deemed to be University, Bhubaneswar, Patia, India, 756001

Presenting Author/Corresponding Author: lp617@snu.edu.in

**Abstract.** Corrosion-induced bond strength reduction is a critical problem in infrastructure maintenance and repair. This study investigates several machine learning techniques, i.e., SVR, XG Boost, and random forest, for predicting the ultimate bond behavior between corroded reinforcement and concrete. In this study author employed 218 datasets of corroded samples collected from past studies containing input and output parameters used for predicting the models. The model's performance was evaluated and compared using various performance metrics, i.e., MAE, RMSE, MAPE, and MASE. The results show that random forest algorithms can reliably estimate ultimate bond strength with an RMSE value of 1.26 over SVR and XG Boost models. This research helps in efficient structural evaluations and maintenance planning for corroded reinforced concrete buildings.

**Keywords:** Corrosion, Bond Strength, Random Forest, Support Vector Regression, XG Boost, Machine Learning

# Splitting Tensile Strength Prediction Using Machine Learning Based Optimization Algorithms

Lukesh Parida<sup>1</sup>, Sumedha Moharana<sup>1</sup>, Sourav Kumar Giri<sup>2</sup>

<sup>1</sup>Department of Civil Engineering, Shiv Nadar Institution of Eminence, Uttar, Pradesh, Dadri, India, 201314

<sup>2</sup>School of Computer Engineering, KIIT Deemed to be University, Bhubaneswar, Patia, India, 756001

Presenting Author/Corresponding Author: lp617@snu.edu.in

**Abstract.** The prediction of splitting tensile strength, a crucial mechanical attribute determining structural performance, is an integral part of assessing the feasibility of recycled aggregates for construction. Traditional techniques for evaluating the splitting tensile strength of recycled aggregates rely on advanced and time-consuming laboratory testing, which may be costly and inefficient for large scale applications. This work proposes machine learning-based algorithms for forecasting the performance of splitting tensile strength. In this research, 257 measurements were acquired from a previous study containing input variables affecting split tensile strength. Three methods were used to build different predictive models, i.e., support vector regression, XG boost, and random forest. The performance indices of various models were evaluated using metrics like MAE, RMSE, MAPE, and MASE to measure the models' accuracy and reliability. This research indicates that Random forest algorithms outperform other models with RMSE value of 1.76. The implementation of proposed models improves the reliability of predictions, allowing researchers to make informed decisions about incorporating recycled materials in sustainable construction practices, thereby contributing to the reduction of environmental impacts in the construction sector.

**Keywords:** Recycled Aggregate Concrete (RAC), Machine Learning, Random Forest, XGBoost, Splitting Tensile Strength, Support Vector Regression

# Technologies for sewage sludge management

Linda Mezule, Ruta Zarina, Kishore Babu Ragi

Water Systems and Biotechnology Institute, Riga Technical University, Kipsalas  
6A-263, Riga, Latvia

**Abstract.** Till recently sewage sludge has been regarded as waste with high risks and problematic re-use and due to its considerably lower quantities than solid waste it has been neglected in circular economy targets. Furthermore, health and environmental risks have been identified, mandatory targets have been set in the EU to reduce the biodegradable landfilled fraction. Nevertheless, constant increase in sludge quantities has been observed globally. In EU the amount of sewage sludge produced per year was 10 million tonnes in 2008, 11.5 million tonnes in 2015 and is expected to approach 13 million tonnes of dry matter (DM) by 2020. Many countries have already set up national wastewater management strategies to aid the industry, especially in resolving issues with sludge disposal. At the same time the importance of sewage sludge as potential resource has already been recognized in the global community. The research describes potential sludge management alternatives to landfilling.

**Keywords:** sewage sludge, resource recovery, waste management, composting

# A parametric study for the structural assessment of multi-ring masonry arches considering influencing factors

Bledian Nela, Marco Pingaro, Patrizia Trovalusci

Department of Structural and Geotechnical Engineering, Sapienza University of Rome; Via Antonio Gramsci 53; 00197 Rome; ITALY

abledian.nela@uniroma1.it  
bmarco.pingaro@uniroma1.it  
cpatrizia.trovalusci@uniroma1.it

**Abstract.** The vast majority of historically significant buildings with large spans are built with curved masonry elements, such multi-ring arches, to attain greater overall thickness. The ultimate capacity assessment of multi-ring arches' ability to withstand external forces is significantly influenced by the various construction techniques utilized. Since such structures are made up of independent rings that are connected to one another through interface contacts, the arrangement of the units and internal mechanical characteristics like friction have a significant impact. Furthermore, it is clear that geometrical features have an important influence on how these assemblies respond. In the evaluation of multi-ring arches under the vertical load at quarter span using an in-house code (*ALMA – Analisi Limite Murature Attritive*) that corresponds to the upper bound limit analysis technique, an extensive combination of these factors, namely, friction angle, disposition and size of blocks, number of rings and span, are taken into account. Following their combination of impacts in terms of collapse multipliers, which are classified as per respective influencing parameters, each parameter's importance is demonstrated. It is demonstrated that the interlocking effect from the placement of units and the friction angle affect the overall structural behavior for different spans and varied shapes.

**Keywords:** multi-ring arches, ring separation, limit analysis, sliding mechanism

# Improving the Durability Properties of Concrete by Using Sustainable Materials

Nora AL-Anssari, Abbas AL-Ameeri

College of Engineering, University of Babylon, Hillah, Babylon, Iraq

nora.al-anssari.engh402@student.uobabylon.edu.iq

abbas.alameeri.eng@uobabylon.edu.iq

**Abstract.** The use of sustainable materials in construction has become essential due to their positive impact on the environment. In this study, binary and ternary blended mixtures of microsilica fume (SF) and nano silicon dioxide (NS) concrete mixes were employed. In order to investigate the impact of these materials on the mechanical properties and to improve the durability of concrete. Two groups of mixtures, binary and ternary blended mixes, were used as well as the control mix. In the first group, micro-SF was replaced with 3.5% and 7% by mass of ordinary Portland cement. Whereas, in a ternary blended group, micro-SF and nano silicon dioxide (NS) were replaced with 3.5% and 1%, respectively, by mass of ordinary Portland cement. A slump test was also performed to assess the fresh concrete properties of the mixes. Compressive and split tensile strengths were evaluated at different curing ages. As well, water absorption test, rapid chloride migration test, and chloride penetration test were carried out to investigate the durability properties. Results show that the replacement of cement by SF in binary blended and ternary blended mixtures reduced the workability of concrete mixes and increased the water demand. On the other hand, a considerable increase in the compressive strength, tensile strength, and durability properties of concrete was recorded. Also, the replacement of cement by 7% SF achieved significant improvements in the mechanical and durability properties of concrete.

**Keywords:** Pipe, Fittings, Rezervori, Manhol

# The advantages of designing residential buildings with the minimum storey height allowed by standards

Ragip Behrami<sup>1</sup>, Drilon Elezaj<sup>2</sup>, Ermal Osaj<sup>3</sup>, Ilir Hetemi<sup>4</sup>, Arton Qorri<sup>5</sup>

<sup>1</sup> PhD student, Ss. Cyril and Methodius University, Institute of Earthquake Engineering and Engineering Seismology – IZIIS Skopje, [rbehrami@gmail.com](mailto:rbehrami@gmail.com)

<sup>2</sup> MSc., University of Prishtina “Hasan Prishtina”, Faculty of Architecture, Prishtina, Republic of Kosovo, [drilonelezaj1@gmail.com](mailto:drilonelezaj1@gmail.com)

<sup>3</sup> BSc., University for Business and Technology UBT, Faculty of Civil Engineering, Prishtina, Republic of Kosovo, [ermalosalaj@gmail.com](mailto:ermalosalaj@gmail.com)

<sup>4</sup> Assistant Professor at UBT - Higher Education Institution, Faculty of Civil Engineering and Infrastructure, Prishtina – Republic of Kosovo, e-mail: [ilir.hetemi@ubt-uni.net](mailto:ilir.hetemi@ubt-uni.net)

<sup>5</sup> Assistant Professor at UBT - Higher Education Institution, Faculty of Architecture, Prishtina – Republic of Kosovo, e-mail: [artion.qorri@ubt-uni.net](mailto:artion.qorri@ubt-uni.net)

**Abstract.** In this paper, the authors try to present the many advantages of designing buildings for collective housing by applying the minimum height of stories allowed by standards. In the paper, the advantages from different aspects are presented such as urban, architectural, energy efficiency etc, while the most particular emphasis is given to the structural aspect, for this purpose, are presented results of the structural analysis for a building with the height of the stories that is usually applied and, in a comparative manner, are presented results for the same building but with the minimum height allowed of the stories. The regulations and design standards recommend the minimum height that the residential floor can have. Through the elaborations presented in this paper, it is intended to provide important information that can be applied in the design of multi-storey buildings for collective housing. As can be seen from the conclusions drawn, the advantages are great and quite valuable, therefore, at the end, some recommendations are also given for the application of the construction of buildings with minimum story height.

**Keywords:** Minimum floor height, design, different advantages, efficiency, performance of the building.

# Assessment of the geometric potential of the rubber tree fruit endocarp as a reinforcing element in cement-based matrices

Fernanda Carolina Resende<sup>1</sup>, Saulo Rocha Ferreira<sup>2</sup>

<sup>1,2</sup> Department of Forest Sciences – School of Agricultural Sciences – Federal University of Lavras (UFLA), Zip code: 37200-000, Lavras, Minas Gerais, Brazil.

fernanda.resende1@estudante.ufla.br  
saulo.ferreira@ufla.br

**Abstract.** The use of plant residues in cement matrices shows promise. The endocarp of the rubber tree fruit is a plant residue that may have the potential to be used in the production of cementitious composites. Therefore, the objective of this study is to evaluate the geometric potential of the rubber tree fruit endocarp as a reinforcing element in cement-based matrices. The waste was collected on the UFLA campus. The endocarps were subjected to treatments in hot water (80°C) and in an alkaline solution containing Ca(OH)<sub>2</sub>. To evaluate the potential of the endocarp as a reinforcing element, the specimens containing treated and natural endocarp were subjected to flexion tests. The results obtained in the flexion test indicated that the endocarp did not act satisfactorily as a reinforcing element in the cement matrix. This result was justified due to the low endocarp/matrix adhesion, which made its action as a reinforcing element impossible.

**Keywords:** Plant waste, Reinforcing element, Composites, Sustainability.

# The Dynamic Wireless Power Transfer Project: the Experimental Development of an Innovative Technology towards the Decarbonisation of Transportation Systems

Rosalba Simeone<sup>1</sup>, Antonio Montepara<sup>2</sup>

<sup>1</sup>PhD, Department of Engineering and Architecture, University of Parma, Parco Area delle Scienze 181/A, 43125 Parma, Italy

<sup>2</sup>Full Professor, Department of Engineering and Architecture, University of Parma, Parco Area delle Scienze 181/A, 43125 Parma, Italy

rosalba.simeone@unipr.it  
antonio.monetepara@unipr.it

**Abstract.** In the recent years, with the rapid development of electric vehicles, the design and evaluation of different solutions for recharging these vehicles have been the subject of numerous studies. Dynamic inductive charging appears as a promising charging solution, offering several advantages: no physical connection with the vehicle, no manipulation by the user during charging, and reduced risk of damage and vandalism of the system. The research path followed two lines of experimentation. One on a large scale which consists of construction of a test track called “Arena del Futuro”, equipped with Dynamic Wireless Power Transfer technology; the track is designed to test new materials and power system solutions aimed at research and system optimization. The other, on a small scale, sees the reproduction of the same technology used in the real circuit, but in the controlled laboratory environment where each variable, that makes up the complex system, can be modified.

**Keywords:** Electric Roads, DWPT (Dynamic Wireless Power Transfer), Electromagnetic Flux, Inductive Load



# Hydraulic analysis of the Prishtina covered river under current conditions

Skender Bublaku, Eron Mekolli

University of Business and Technology in Kosovo, Kalabri, Prishtinë

skender.bublaku@ubt-uni.net

**Abstract.** Prishtina, as the capital of Kosovo, along with its surrounding areas, has undergone significant urban changes in the past 20 years. As a result of intensive construction, especially in residential areas, various economic activities, road infrastructure, and sidewalks, many green areas have been transformed into construction sites. Consequently, due to the expansion of built-up areas in recent years, phenomena such as flooding and inundations have occurred not only in the city center but also in peripheral areas like Fushe Kosova. This phenomenon is linked to two factors: (i) numerous constructions have increased the surface runoff of water and reduced infiltration into permeable layers, and (ii) it has been documented that there have been more rainfall events in recent years compared to the long-term average. The results of the study show that, at the regional level of Prishtina, the areas of rooftops and primarily urban areas have increased from 308.5 hectares in 2004 to approximately 501.5 hectares in 2022, which represents a 62% increase. The most significant growth has been observed in roads and sidewalks, where in 2004, there were 259.8 hectares, and in 2022, there are 591.4 hectares, an increase of 227%. It is expected that green areas will decrease by approximately 5%. Rainfall for the period 1948-1998 was 578.9 mm, while for the period 2000-2020, it was 650.0 mm, representing an increase of approximately 12.2%. The hydraulic analysis of the Prishtina river in the area covered from the entrance of the city in the northern part to the last point in the Kalabri neighborhood shows that for the 50-year and 100-year recurrence period, the flows are 148.2 and 239.9 m<sup>3</sup>/s, respectively. The Prishtina River is largely incapable of accommodating these flow rates. Consequently, the low-lying areas of the city, beginning from Tophane, Center, and Dodona, will be susceptible to frequent flooding, while the city areas in Dardani, Pejton, Kalabri, and Fushe Kosova are expected to experience more severe consequences.

**Keywords:** Residential areas, flow, floods, rainfall, runoff,

# The use of public space for vehicle parking: A case study of Ferizaj

Bekim Selimi, Beni Kizolli

UBT - University for Business and Technology; Prishtinë, Republic of Kosovo

Email: bekim.selimi@ubt-uni.net  
beni.kizolli@ubt-uni.net

**Abstract.** The rising standard of living, coupled with a lack of alternative transportation options, has spurred an increase in personal car ownership as a primary mode of transportation. However, this trend has led to challenges in managing vehicular movement within cities. Individual vehicles often remain underutilized during the day, primarily seeing use during peak traffic hours for commuting, trading, or leisure activities. In most cities around the world, economic, administrative, and commercial activities are concentrated within a relatively small urban area, typically reflecting the city's original layout. This central district serves as the focal point for the majority of the urban population, facilitating their professional obligations, trade, entertainment, and more. Parking issues have arisen due to the growth of cities, the proliferation of motor vehicles, inadequate infrastructure for smooth traffic flow, and an increase in living standards. The need for parking lots and spaces in Ferizaj has become pressing. In the absence of designated parking facilities, vehicles are scattered throughout the city streets, with the central area facing the greatest demand. This study focuses on the "Gjon Serreci" school plot as a potential location for a parking facility to alleviate this issue. Situated in proximity to the city center, this area offers easy access for both central residents and all city dwellers who frequent this part of Ferizaj. The proposed solution is an underground parking facility consisting of three floors. The underground levels are dedicated to parking, while the upper levels will host green spaces serving as parks. Additionally, the possibility of incorporating business spaces is being considered, with the size of these spaces limited to certain floors and specific areas.

**Keywords:** Vehicles, Parking, City Center, Square, Transportation, Public area.

# Effect of waste rubber tire ash and recycled concrete fines in concrete

Sofi A<sup>1</sup>, Praveen Nagarajan<sup>2</sup>

<sup>1</sup> Professor, Department of Structural and Geotechnical Engineering, School of Civil Engineering, Vellore Institute of Technology (VIT), Vellore-632014, TamilNadu, India.  
[sofime@gmail.com](mailto:sofime@gmail.com) , [asofi@vit.ac.in](mailto:asofi@vit.ac.in) (Corresponding author)

<sup>2</sup> Professor, Department of Civil Engineering, NIT Calicut, Calicut, Kerala, India.

**Abstract.** Every year in the world, millions of tons of waste are produced which all the waste produces are not recyclable. The main cause for pollution is the energy consumption of recycling waste. The problem of accumulation of waste is increasing day by day and are very dangerous for the environment. Around 1000 million tires are left unused at the end of their utility period in every year. It has been expected that around 5000 million extra will be expected by the year 2030. More than 3 billion tons of construction and demolition waste (CDW) is produced annually. The main source is construction industry. This is an increasing problem day by day which cause serious land filling. As an alternative, the demolition waste can be processed and used as an aggregate in concrete and mortar. Hence, this work mainly focus on use of waste tire rubber ash as substitute of cement and using fine aggregate produced from recycled concrete fines as substitute of fine aggregates for the production of concrete. A replacement of 3% and 6% of waste tire rubber ash as cement and a partial replacement of 10% and 15% of recycled concrete fines as fine aggregate were casted and tested for its various curing periods. Mechanical properties such as compressive strength, splitting tensile strength, flexural strength tests were carried out. The obtained test results were compared and analyzed with control mix.

**Keywords:** Rubber tire ash, Recycled concrete fines, Concrete, Compressive strength, Splitting tensile strength, Flexural strength

# Indoor air quality impacts into life cycle assessments of buildings and building

Afrim Sylja

UBT Str. KALABRIA p.n., Pristina, Kosova

afrim.sylja@ubt-uni.net

**Abstract.** Human exposure to indoor pollutant concentrations is receiving increasing interest in Life Cycle Assessment (LCA). Products used during construction and operation of a building can contribute to Indoor Air Quality (IAQ) problems that affect occupants' well-being. However, IAQ is conventionally not addressed in the life cycle assessments (LCAs) of buildings and building related products even though IAQ leads to one of the areas of protection under LCA - human health impacts. In this study, we proposed an overall framework for integrating IAQ into LCA using the standard steps of LCA. The framework focused on IAQ and LCA modeling from two categories of building related products: i) passive products that realize their function through initial installation and have long-term decayed emissions, and ii) active equipment that realize their function and cause emissions through daily operation. Dynamic and static life cycle inventory modeling approaches were proposed for passive products and active equipment, respectively. This study demonstrates the appropriateness and significance of integrating indoor environments into LCA, which ensures a more holistic account of all exposure environments and allows for a better accountability of health impacts

**Keywords:** Indoor air quality, life cycle assessment of buildings and building.

# Design and Environmental impact of an office building made by steel and timber

Bekim Tolaj<sup>1</sup>, Shkumbin Hyseni<sup>1</sup>, Bruno dal Lago<sup>2</sup>, Visar Krelani<sup>1</sup>

<sup>1</sup>Faculty of Civil Engineering, UBT, Prishtina, Kosova bt42841@ubt-uni.net,  
sh42842@ubt-uni.net, visar.krelani@ubt-uni.net

Dept. of Theoretical and Applied Sciences, University of Insubria, Italy.bruno.dal-  
lago@uninsubria.it

**Abstract.** The modern challenges in constructions represent an important value based on the choice of construction material. Different aspects should be taken into account, engineering structural aspect, exposure conditions which are related with durability, and not the less, the environmental impact based on the chosen typology of construction material. A comparison between two typical structural materials such as steel and timber have been compared such in the structural and environmental impact, based also in the cost and other parameters, all this for the same building office. These materials are highly used in this field but not always have been clarified their impact. Based on a structural and numerical analysis of timber and steel construction, for the same building, up to the details of connections, cross-sections of the elements, up to the calculation of quantities and their comparison, offer us a clear information about its impact which directly affect the decision of the investment and then the construction typology. Also, when applied the dynamic loads but being different materials we also gain different results.

**Key words:** Wood structures, metal structures, use, construction, dimensioning, comparison, loads, connections, joints.

# Geopolymer Binder for the Production of Sustainable alternative Building Materials

Laura Vitola, Diana Bajare

Institute of Materials and Structures, Riga Technical University, Kipsalas 6A,  
Riga, Latvia

**Abstract.** The climate change and limited resources are important challenge of Building sector. Due to the relatively low CO<sub>2</sub> emissions and possibility to reduce the environmental impact geopolymers are considered as environmentally friendly substitute for Portland cement. Geopolymers are being studied as materials for use in construction because of their relatively high mechanical strength, good volumetric stability and high resistance to fire and chemical attack. Although geopolymers have gained popularity, they differ in their structural design and technology comparing to traditional building materials, making it important to understand the influence of different factors (e.g., composition, production conditions, zeolite content) on the properties of geopolymers.

**Keywords:** geopolymer binder; alternative building materials; sustainability.

# **AUDIT OF ROAD SAFETY ELEMENTS IN THE CITY OF PRISTINA**

Xhesika Hasa\*, Nol Dedaj

UBT (University for business and Technology)

xhesika.Hasa@kek-energy.com

nol.Dedaj@ubt-uni.net

**Abstract.** This article shows a study done by the Infrastructure Engineering Group at the University of Business and Technology regarding the applicability of Design Standards in various infrastructure works in the City of Pristina and beyond. Arguments are given for the conclusion about the necessity of using additional tools, able to minimize the risks of accidents foreseen by the human factor. In the conclusions, it was concluded that the state of the infrastructure in Pristina is not at the levels it should be, but in addition it has been concluded that in some locations not only the construction standards have not been taken into account, but they are not even maintained properly.

**Keywords:** Infrastructure, Road, Overpass, Road violation, Road Sign, Autoway, Highway

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# Creating Essential Spaces within the Orphanage Environment

Altina Rexhbeqaj<sup>1</sup>, Sebil Spat Brahloka<sup>2</sup>

Prizren, Kosovo

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

ar43614@ubt-uni.net

sebil.spat@ubt-uni.net

**Abstract.** Every person conceived has specific needs from the moment of birth. These needs include critical aspects such as food and shelter, safety, knowledge, and the belief that someone has worth, both for themselves and others.

One of society's challenges is the issue of orphans. These are innocent children who have lost their families under specific circumstances and are left orphaned by force.

In reality, orphaned children are victims of society, a society that not only deprives them of the warmth of having a rightful, natural family but also does not fully accept them, viewing them as outsiders. Depriving orphans of the presence of parents as the fundamental basis of the family system challenges their positive self-concept more than ever before.

Deprivation of the natural function of a family can impact not only the self-concept of orphans but also affect their perception of the future. A disappointed child is one with a negative attitude toward themselves and their future. Compared to other children, they experience less secure attachments with a caregiver. However, the need for belongingness is universal. Belongingness means the desire for enduring social connections, and any threat to this need can evoke feelings of loneliness.

Orphans do not always encompass all the necessary functions to provide adequate shelter and food. These individuals have diverse needs, such as education and entertainment.

The design theme of spaces has attempted to consider significant factors to create a sense of belonging to the environment for children. It aims to design a space for them so that they feel like members of society. Control in this context signifies the careful planning and execution of the designed space, ensuring it meets the specific needs and fosters a sense of belonging for the children.

**Keywords:** Orphanage Design, Society's challenge, Diverse Needs of Orphans, Sense of Belonging

# How Urban Environments Impact Animal Adaptations

Fatka Kabashi, Sebil Spat

Prizren, Kosovo

fk39346@ubt-uni.net  
sebil.spat@ubt-uni.net  
sebil.spat90@gmail.com

**Abstract.** The research falls under the domain of Advanced Integrated Design, and it delves into the topic of Addressing the Welfare of Urban Animals.

Inspired by Professor Sebil Spat's article, "How many equal rights do the inhabitants of the globe have in the 21st century?", this study focuses on one specific aspect of the article, namely, the situation of urban animals.

As human beings, we have the capacity to assist animals struggling on the streets, facing the challenges of food and shelter scarcity. Homeless animals encompass a population of dogs, cats, and other creatures residing on city streets and in recreational areas.

Regrettably, many individuals pass by these homeless animals every day, often failing to acknowledge their presence and perceiving them as unwelcome nuisances.

Our city lacks a comprehensive service for the protection and welfare of animals that require capture, sterilization, vaccination, and care. This study's objective is to develop an intelligent animal housing system designed to provide controlled access to food and water, thus addressing the essential needs of street animals.

**Keywords:** Urban Animals, Animal Population, Homeless Animals, Intelligent Housing for Animals

# Illustration Techniques and Their Role in 'Punch' Magazine: A 19th-Century Perspective

Kaltrina Veselaj Shllaku<sup>1</sup>, Visar Shllaku<sup>2</sup>

<sup>1</sup>Integrated Design, UBT - Higher Education Institution, Prishtine, Republic of Kosovo

<sup>2</sup>Architecture and Spatial Planning UBT - Higher Education Institution "Lagja Kalabria" p.n. 10000 Prishtine, Republic of Kosovo

kaltrina.veselaj@ubt-uni.net

visar.shllaku@ubt-uni.net

**Abstract.** This paper explores the illustration techniques of "Punch" magazine, a renowned British satirical publication founded in 1841 by Henry Mayhew and engraver Ebenezer Landells. "Punch" is celebrated for its expressive satire, primarily conveyed through iconic illustrations. The magazine's illustrators primarily used woodblocks and steel plate engravings, known for crafting detailed visuals. In the 19th century, numerous comic artists, including John Tenniel, John Leech, Richard Doyle, George Cruikshank, Charles Keene, Phil May, Linley Sambourne, and Samuel Pepys, made significant contributions to "Punch." John Tenniel, particularly renowned for his illustrations in Lewis Carroll's "Alice's Adventures in Wonderland," exhibited exceptional talent in depicting characters like Alice, the Cheshire Cat, and the Mad Hatter. His work is characterized by imaginative and captivating presentations, enduring as exemplars of 19th-century visual artistry. This paper offers crucial insights into the illustration techniques that "Punch" employed to sharply critique 19th-century British events, revealing the power of visual commentary.

**Keywords:** Punch, Illustrations, Satirical Illustration, Victorian Caricatures, Engravings, 19th-century periodicals.

# ‘Waste Not - Want Not in Kosova’

Aferdita Statovci

University for Business and Technology, Prishtina, Kosovo

aferdita.statovci@ubt-uni.net

**Abstract.** This paper investigates the methods of applying sustainable fashion with focus in Kosova by using the three R’s- Respect, Re-use and Recycle. As a second most polluting industry in the world today, at a time when fast fashion has become the norm, the need for collectively addressing our influence as consumers, designers and industry leaders will be discussed. Environmental, social, human and economic impacts of the fashion industry will be examined. A single item of clothing creates a large carbon footprint, a result of production that includes farming, harvesting, manufacturing, processing and shipping. Pesticides in cotton farming, toxic dyes in manufacturing and landfill waste of discarded clothing add to the environmental costs of a garment. Given the amount of waste generated by fashion industry in production and post-production (purchases), some practitioners choose to work with existing materials, thus bypassing the need to take more from nature and this will be examined with focus on the fashion industry in Kosova. In conclusion a creation of a system that can be supported indefinitely in terms of human impact on the environment and social responsibility will be proposed. Sustainable fashion, also called eco fashion, will be presented as an alternative trend against fast fashion.

**Key words:** re-use, respect, recycle, sustainable fashion, eco-fashion, environment, fashion, social responsibility

# The Involvement of Nature in the Urban Structure

Leonita Trolli<sup>1</sup>, Ajhan Bajmaku<sup>2</sup>, Sebil Spat Brahloka<sup>2</sup>

<sup>1</sup>Prizren, Kosovo

<sup>2</sup>UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n., Prishtinë, Kosovo

lt39340@ubt-uni.net  
ajhanbajmaku@ubt-uni.net  
sebil.spat@ubt-uni.net

**Abstract.** The research falls within the realm of Advanced Integrated Design, focusing on the theme: "Involvement of nature in the urban structure". Drawing inspiration from Prof. Sebil Spat's article, "How many equal rights do the inhabitants of the globe have in the 21st century?" the study has chosen to concentrate on one specific point from the article, which is nature. As humans, our connection with nature is vital. In an era where urbanization is rapidly increasing, it is imperative to establish a harmonious relationship between the built environment and the natural world. Regrettably, preserving nature in urban areas is often viewed as a problem needing resolution, yet urban planning frequently neglects this issue. Instead, attention is diverted towards individual achievements.

To create a sustainable and livable urban future, it is essential to shift our perspective. Rather than attempting to dominate and detach from nature, our focus should be on designing living spaces where nature is at the core of the architectural vision. Studies have shown that connecting with nature is linked to improved mental health, reducing rates of depression and anxiety. Traditionally, urban design has severed our ties with the natural world, leading to a perception of nature as something distant and isolated from us. To counter this, architectural and design projects must prioritize natural spaces without altering the existing landscape. The objective is to regenerate urban environments while preserving the essence of nature.

**Keywords:** Nature, Urban Structure, Sustainable and Livable Urban Future, Design and Architectural projects, Mental Health.

# FASHION AND TECHNOLOGY-Graphic Design

Arbresha Hoxha, Amina Sofiu

UBT – Higher Education Institution

**Abstract.**Regarding this topic, I have focused on the passing of time, fashion and technology, and the present time. Therefore, the purpose of this research is to analyze and examine the time of the 1st century and now in the century we live in. This "prediction" was made by analyzing the statistics, potentials, time of launch and entry into function or trend (fashion) of these new methods, techniques and machines in the fashion and textile industry. In recent times, graphic design and fashion are 2 in 1 because of the illustrations that are made through the illustrator program. Fashion and Graphics are two things that have never been separated since 1999.

Fashion and technology, discoveries of the first fashion technology, developments, existing technology used in our time of fashion, technology for printing in the field of fashion, what discoveries affect the present of the fashion industry.

**Keyword:** Technical, marketing informational design

# Information design and UX, UI design Marketing QR Code

Arbëresha Hoxha

UBT College, Pristina

**Abstract.** Information design is the practice of presenting information that is clear, accessible and effective. The term information design has come to be used for a specific area of graphic design concerned with displaying information effectively. Information design is closely related to the field of data visualization, communication design and information architecture. The term information graphics is used by those primarily concerned with diagramming and displaying quantitative information, such as technical communicators and graphic designers. In technical communication, information design refers to the creation of an information structure aimed at a specific audience, this means the selection of content and its division into separate manuals according to the audience and purpose, concept, examples, references. The title of information designer is used by graphic designers, who specialize in creating websites, as the title is more globally applied. User experience (UX) and user interface (UI) design often go hand in hand, but the two fields have some important differences. UX encompasses the overall experience a user has with a product or service, UI focuses on graphic design and interface.

How are information design and UX, UI design related?

Empathy, User Research, Ideation, Visual Design, Information Architecture. With a QR code, customers or target audiences can be directed to a page where they can post reviews about your services or products. The next step is review management, which can be done by digital marketing consultants.

SMS marketing with QR codes What is SMS Marketing?

Most brands, when they talk about SMS marketing, mean the practice of mass communication, SMS marketing to consumers. Typically, these SMS messages will have some type of direct or indirect call to action that generates revenue, such as a coupon, promotion or discount to redeem. SMS marketing is very similar to email marketing, online marketing on certain platforms.

**Keyword:** interaction design.

# 'Design reflection in the challenges of time'

Ardita Rizvanolli

University of Business and Technology-UBT, Prishtine, Kosova

ardita.rizvanolli@ubt-uni.net

**Abstract.** The design 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 design can contribute to promoting social and political changes for sustainable development. Professional design are constantly highlighting the figure, very often with a frivolous approach, exploring the use of trendy materials. Styling as an identity despite the historical stages. Identity remains eternally emblematic for all time, providing us with inspiration not to stray from the reflection of power within the elements of the figure.

**Keywords:** design, strength, change, identity



# Exploring Resilience: The Aesthetics of Vintage Fabrics

Ariana Gjoni

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

ariana.gjoni@ubt-uni.net

**Abstract.** In the enchanting world of textiles, the allure of old fabrics lies not only in their aesthetics but also in the indomitable spirit of resilience they exude. This research paper delves into the profound aesthetics of vintage textiles, exploring their timeless appeal and the narratives they carry. Employing historical analysis, scientific scrutiny, and artistic interpretation, we unveil the captivating charm of aged fabrics. By investigating how old fabrics narrate stories of human ingenuity, cultural metamorphosis, and environmental sustainability, this paper illuminates the enduring beauty that resides within the vintage textile realm. These fabrics are more than just artifacts; they are gateways to the past, and a testament to the enduring tenacity of human creativity and our planet's resources.

**Keywords:** Resilience, Aesthetics, Vintage Fabrics, Artistic Interpretation

# Sourcing Sustainability: The Impact of Dead Stock Fabrics and Zero Waste Fashion

Ariana Gjoni, Shkurte Ejupi, Zana Maxhuni, Donika Rexhepi, Edonita Telaku

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

ariana.gjoni@ubt-uni.net

se41834@ubt-uni.net

zm69796@ubt-uni.net

dr42032@ubt-uni.net

et69761@ubt-uni.net

**Abstract.** In an era of heightened environmental awareness, the fashion industry faces a pivotal moment. 'Sourcing Sustainability: Dead Stock Fabrics and Zero Waste Fashion' examines two promising strategies for reducing the industry's ecological impact. Dead Stock fabrics, surplus materials with potential, offer a unique opportunity to cut waste and preserve resources. This paper explores their economic, environmental, and ethical aspects, as well as their potential to stimulate creativity, support local economies, and promote circular fashion. Additionally, the study delves into zero waste fashion principles, including design practices, environmental benefits, and potential challenges in mainstream adoption.

**Keywords:** Sustainable practices, Waste reduction, Creative design thinking, Environmental consciousness

# The Impact of Fashion on Sustainable Development

Ariana Gjoni, Marigona Susuri

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

ariana.gjoni@ubt-uni.net  
ms42911@ubt-uni.net

**Abstract.** This research, part of Advanced Integrated Design, examines the impact of fashion design on sustainability. The fashion industry's rising production of non-permanent clothing harms the environment. This study encourages fashion industries to create durable clothing, thereby transforming the environmental impact from negative to positive. Given the pressing nature of this issue and our inadequate response, the topic's significance is clear. Our environment is crucial, and this research tackles the challenge of accurately assessing and attributing the environmental and social impacts of new fashion products.

**Keywords:** Fashion influence, Environmental Impact, Sustainability, Social Impact

# Impact of the Application of Digital Technologies in Fashion Design in the 21-st Century

Ariana Gjoni, Alma Salihi

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

ariana.gjoni@ubt-uni.net

as43897@ubt-uni.net

**Abstract.** This research explores the transformative impact of digital technologies in 21st-century fashion design, within the field of Advanced Integrated Design. Digital tech has significantly reshaped the design, production, distribution, and marketing of fashion, making it more appealing and accessible. Designers utilize software and technology to create virtual fashion, enhance colors, textures, and shapes, and market products on digital platforms. Studies predict a promising future for digital tech in fashion, emphasizing the need for designers to enhance their digital skills for attractive and successful designs. This research aims to promote a deeper understanding of digital technology's role in fashion design and its critical importance for designers.

**Keywords:** Digital Technology, Fashion Design, 21-st Century Fashion Design, Online platform

# Embracing Imperfection in the Field of Fashion Design

Ariana Gjoni, Nertila Memaj

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

ariana.gjoni@ubt-uni.net

nertila.memaj@ubt-uni.net

**Abstract.** This abstract explores the beauty of deconstruction in fashion design, celebrating irregularities, flaws, and uniqueness. It also discusses how imperfection connects with sustainability through reusing, recycling, and using surplus materials to maximize resources and reduce waste. Drawing from the Japanese philosophy of Wabi-Sabi, it emphasizes appreciating imperfection as a way of life and an art form. In fashion design, this concept is applied to inspired dresses, shifting the focus from perfection to showcasing unfinished stitching, symbolizing skilled dressmaking. Transparent materials reflect the inner part, emphasizing the idea of ongoing creativity and continuity in fashion.

**Keywords:** Deconstruction, Sustainability, Fashion Design, Waste Reduction

# The Use Of Technology In The Fashion Industry

MA. Hana Zeqa

Integrated Design

**Abstract.** Fashion Wearable Technology is an innovative and dynamic segment within the fashion industry that unites functionality, fashion and the technology. This field of study includes a wide range of technologies such as textiles smart textiles, nanotechnology, AI, soft robotics and engineering, that enable the use of clothing more than just an aesthetic item. Moreover, these advances allow clothing to be functional that can help individuals in their lives their daily lives through biometric measurements. Technology integration within fashion has created an opportunity for sustainability by produce durable and multi-functional clothing that can serve for multiple purposes. This intersection of fashion and technology has the potential to revolutionize the industry and has paved the way to cloud research and innovation

# The Future of Sustainable Interior Design in the Context of the Impact of Digital Technologies on User Emotions

Ylber Limani, Erblina Salihu

<sup>1</sup>UBT College, Prishtina,  
ylber.limani, es47421 {@ubt-uni.net}

**Abstract.** This paper analyzes and discusses the complex relationship between sustainable interior design and digital technologies in the context of their impact on user emotions. With the goal of contributing to the enhancement of users' quality of life, this research examines how sustainable design principles, such as the use of sustainable materials and socially managed environments, can significantly contribute to the creation of healthier, more comfortable, and emotionally attractive interiors. The underlying assumption is that the alignment of sustainable principles with the capabilities of digital technologies can play a crucial role in achieving this. The integration of digital technologies and the creative insights of designers has the potential to revolutionize the way interior spaces respond to users' emotions. However, if the primary focus of utilizing digital technology in interior design is profit-oriented, it may have a disruptive effect on user emotions. This paper seeks to provide with more explanation on this complex relationship between sustainable interior design, technology, and user emotions, emphasizing the importance of a user-centric approach in designing interior spaces.

**Keywords:** Interior design, user emotions, digital technology, sustainable design.

# Cause and Effect Analysis of Interior Design Failures

Ylber Limani, Era Avdyli

UBT College, Prishtina

ylber.limani, ea49264{ @ubt-uni.net }

**Abstract.** Although the field of design and interior design have reached a peak of creativity and innovation, they also experience many failures. Different authors have presented different forms that point out the failures in interior design. However, few authors have studied the basic or critical reasons that have led to the failure of various projects and interior products. This research aims precisely to identify and analyze the causes that have the effect of various failures in interior design. The methodology used to carry out the research is theoretical method: the literature review, as well as quantitative and statistical methods. Data obtained from the survey collected, selected and analyzed, and finally used for hypothesis testing. The results of the research provide an answer to the research questions and hypothesis testing by arguing the importance of interior design factors that may lead to the design failure.

**Keywords:** Interior Design, design failures, cause and effect, analyses



# Universal Design for Children in the Education System

Iliriana Kryeziu, Sebil Spat Brahloka

Prizren, Kosovo

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

ik43419@ubt-uni.net, sebil.spat@ubt-uni.net: sebil.spat90@gmail.com

**Abstract.** In an ever-changing world, the inclusivity of educational spaces is paramount. Traditional designs often fall short in addressing the diverse needs of students, educators, and visitors. Universal design, a concept rooted in creating environments accessible to all, emerges as a transformative solution. This paper explores the profound implications of universal design, specifically focusing on its application in educational settings to ensure an inclusive, nurturing, and empowering learning environment for children.

Universal design transcends physical accessibility. It encapsulates a mindset that values diversity, embraces differences, and leverages them to enrich the educational experience. By addressing various aspects such as physical, sensory, cognitive, and social needs, universal design fosters an atmosphere where every child, regardless of their abilities, can thrive.

In this study, we are going to analyze the key principles of universal design spaces and reflect on them through a project.

**Keywords:** Universal Design for Kids, Educational Spaces, Physical Accessibility

# Colorimeters and Spectrophotometers - their professional use for measurement of colours in Design Prototyping

Author: Prof. MA.GD. Milot Gusia

**Abstract.** In professional measurement of colors in various surfaces of design models, there have been significant challenges posed by traditional color models that have made the accurate measurement and notation of colours difficult. This paper examines the use of colorimeters and spectrophotometers in accurate measurement of colours and of results obtained in coordinates within the various color spaces such as: CIE XYZ ( $Y_{xy}$ ),  $L^*a^*b^*$ ,  $L^*C^*h^*$ , Hunter Lab, and Munsell. The paper starts by explaining the use of colorimeters in design, through three sensors calibrated in conformity with the sensitivity of human eye, hence obtaining the colors in three stimulus method. Furthermore, the paper explains the use spectrophotometers, which despite colorimeters has multiple sensors, hence as a more sophisticated instrument, gives a more thorough information regarding the colors of design models by means of SPD (Spectral Power Distribution).

**Keywords:** Spectrophotometers, Colorimeters, Design Prototyping, Color Calibration in Design

# Redesigning of the Multifunctional Mixer by the Ashby Chart Material Selection Method

Mevludin Shabani, Zana Kume Tytynxhiu, Vesa Kuçi

**Abstract.** Creativity as human activity is usually driven by various motives and expressed in different forms, most frequently through the designing or redesigning of a product, process, system, etc. This paper precisely follows that course, redesigning a product; modification of the physical properties of a kitchen utensil that has wide use in human activities.

During the research, similar products were analyzed, then posed the key questions by the goal - the modification of the material of the mixer bowl. From the wide range of materials candidate materials, (Polyvinyl Chloride (PVC) and Polyether (PEEK)) were identified, which possess properties that will enable the fulfillment of the research. The selection of the material was carried out applying the material selection method "Ashby Charts". After comparing and analyzing the materials' physical properties, we achieved a selection of the promising candidate material that would represent a serious alternative for the design of the multifunctional product/mixer, particularly in terms of health and environmental perspective

# **The importance of technology, the impact of innovations and design in improving production quality in Kosovo.**

Naim Ostergllava, Afrim Loku and Mevludin Shabani

UBT College – Higher Education Institution Prishtina  
Robert Kosova, Fabiana Cullhaj, Teuta Thanasi, Arben Reka, Taulant Kullolli, Gjergji Thanasi  
University “Aleksandër Moisiu”. Durrës. Albania.

**Abstract.** Today the researches of the manufacturing industry are very challenged to find the vital factors in technology. The importance of technology, innovation, design and quality are challenges for manufacturers. The resources of the manufacturing industry are poor and unpredictable in their sustainability due to the fact that Kosovo has a fairly weak factory infrastructure, perhaps the weakest in the region. Human resources are also a serious problem because they are absorbed by the European market and the main reason is the low salaries that further complicate things in Kosovo. According to the survey and research we have done on the manufacturing industries, it turns out that design innovation and the generation of new ideas are added value for every manufacturing industry. This paper will try to show the importance of these above mentioned factors, and their impact on quality and productivity in the industry as added value and advantage. Therefore, this paper will refer to technological innovations, design and creative technological ideas in the manufacturing industry of the Republic of Kosovo.

**Keywords:** Design, innovation, Kosovo, quality, technology, production.

# Asymmetry of Has clothing as a social category, serving the fashion industry

Dr. Nexhat Çoçaj

Kolegji UBT

Nexhat.cocaj@ubt-uni.net

**Abstract.** The asymmetric elements of Has clothing are ancient elements of this attire, which have withstood all changes and transformations made over time. Asymmetry, primarily used in women's clothing, has conveyed protection against evil eye, indicated the desire for the number of children, and the relationship within the couple. The asymmetry in the women's clothing of Has can otherwise be said to be the alphabet or hieroglyphs of clothing, through which desires for the family's economic status and desired professions are also shown. The hieroglyphs of clothing asymmetry are expressed through colors, floral and zoomorphic figures, which can only be interpreted through the functions they have performed in the past and continue to be preserved today, wherever they are used.

**Keywords:** asymmetry, evil eye, colors, floral figures, zoomorphic, etc.

# "COLLECTIVE MEMORY OF URBAN SPACES IN OLD PRISTINA AS A TRADITIONAL APPLICATIVE MEDIA"

Uran Krasniqi

**Abstract.** Efforts to understand human relationships with the spaces they inhabit and operate in, which need to be both accurate and applicable for creating a better societal world, are perhaps as ancient as the development of written language itself. Evidence of these endeavors can be found in early religious and philosophical texts. Works such as Aristotle's "Nicomachean Ethics" stand out as notable examples from ancient Greek literature and can be likened to early texts from Ancient China, like Laozi's "Tao Te Ching." In the Western world, endeavors to comprehend social relations continued during the early stages of the modern era, notably through the works of renowned philosophers like Baruch Spinoza and Immanuel Kant. However, it was only at the beginning of the 18th century that studies in this field began to take the form of a theoretical discipline, later known as Sociology. About fifty years ago, in one of the most famous, widely read, newly published, translated into numerous languages, and widely cited books in the field of social sciences, titled "The Sociological Imagination," American sociologist C. Wright Mills suggested that sociological inquiry had, until then, been more influenced by bureaucratic concerns than the intellectual concerns of society. He pointed out that sociological studies had been primarily focused on accumulating data aimed at facilitating administrative decision-making, with little attention paid to the real issues of society, especially long-term societal concerns. In conclusion, efforts to understand the complex relationships between humans and the spaces they inhabit and the impact on creating a better society have a rich history. These efforts have their roots in ancient religious and philosophical texts and continue to evolve in response to the changing societal landscape.

# Graphic Design Application in Marketing: Business Branding Challenges

Ylber Limani, Era Hyseni

UBT College, Prishtina

ylber.limani, eh 47701 { @ubt-uni.net }

**Abstract.** This research work aims to examine the importance of the application of graphic design in the field of business marketing with the focus on business branding. Graphic design is a key tool to enhance the presentation of products and services to consumers, creating a powerful emotional impact and visual appeal. In this study, graphic design techniques and tools such as colors, shapes, visual elements, and typography were analyzed to understand their impact on consumer responsiveness and brand identification. A thorough analysis included the relationship of graphic design with marketing strategies with emphasis on business branding. The use of graphic design in social media platforms and websites is another particular aspect of this research. The results show graphic design can influence customers' choice and their alignment with brand values and identity. This study concludes that investing in graphic design is a critical step for businesses facing an increasingly difficult and information-overloaded marketplace. Graphic design provides a powerful way to differentiate businesses from the competition and build unique brand identities. The study recommends businesses to advance in awareness related to the importance of graphic design and integrate it into their marketing and branding strategies.

**Keywords:** Graphic Design, branding, digital marketing, concepts,

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Lagjja Kalabria p.n KS - 10000, Prishtinë

+383 38 541 400

+383 38 542 138

[www.ubt-uni.net](http://www.ubt-uni.net)

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

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