

ISSN 2637-3298



UNIVERSITY PIM BANJA LUKA
UNIVERZITET PIM BANJA LUKA

**INTERNATIONAL CONFERENCE ON SOCIAL AND
TECHNOLOGICAL DEVELOPMENT**

THE BOOK OF ABSTRACTS

**MEĐUNARODNA KONFERENCIJA O DRUŠTVENOM I
TEHNOLOŠKOM RAZVOJU**

ZBORNIK IZVODA RADOVA

Banja Luka, Trebinje, October, 09-10, 2020
Banja Luka, Trebinje, 09. i 10. oktobar 2020. godine



UNIVERSITY PIM BANJA LUKA

VIII INTERNATIONAL CONFERENCE ON SOCIAL
AND TECHNOLOGICAL DEVELOPMENT

THE BOOK OF ABSTRACTS

&

CONFERENCE PROGRAM

Co-organizers:



Univerza v Mariboru

Fakulteta za logistiko



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VIII INTERNATIONAL CONFERENCE ON SOCIAL AND TECHNOLOGICAL DEVELOPMENT

BOOK OF ABSTRACTS

Publisher:

University PIM, Banja Luka, Republic of Srpska, B&H

Editorial board:

Dejan Kojić, PhD, Vice-Rector for Science

Design and Computer processing:

Aleksandar Sofrić, dipl. Ing.

Print:

„Vilux“ Banja Luka

Circulation:

100 copies

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The authors have full responsibility for the originality and content of their own papers.

IX INTERNATIONAL CONFERENCE ON SOCIAL AND TECHNOLOGICAL DEVELOPMENT

CONFERENCE PROGRAM

According to the epidemiological situation around caused by corona virus pandemic this year's Conference is going to be held as following:

- Introductory speech of the Rector of University PIM, prof. dr Dragan Đuranović and director University PIM, prof. dr Ilija Džombić
- Plenary speaker presentation are going to be available at the same web site in a form of power point presentation or audio presentation.
- Poster presentations are going to be available in the same form, with e-mail addresses to ensure communication among participants and members of commissions. Poster presentation are going to be available also in the halls of the University PIM Banja Luka, Trebinje and Brčko.
- The Book of Abstracts and Program will be presented at the Conference site.
- Access to all presentation will be possible for a longer period of time.

We have decided on this kind of work in order to enable the participants to present the results of their research and get acquainted with the work and research results of their colleagues, after which they can communicate in person via e-mail addresses that will be indicated. As in previous years, the papers will be published in the Conference Proceedings.

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PLENARY LECTURER
PLENARNO PREDAVANJE

NOVEL POLYCARBONATE-BASED POLYURETHANE NANOCOMPOSITES: SYNTHESIS AND CHARACTERISATION

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ABSTRACT

All aliphatic starting reactants were used to prepare two series of polycarbonate-based polyurethane (PC-PU) composite films: 1) with a low amount of titanium dioxide nanoparticles (0.5, 1.0 and 2.0 wt%) by one-step technique and 2) PC-PU hybrid materials by addition of submicron amorphous SiO₂ Sidistar T120 particles (0, 1, 2, 5 and 10 wt%) using prepolymerization method. The study of the influence of different filler distribution on the structure of obtained elastomers composites was performed using FT-IR, SEM and AFM. TGA analysis was carried out to investigate the effect of inorganic fillers on thermal stability and degradation of synthesized PC-PU materials. The impact of silica and titania on the glass transition temperature and melting of obtained polyurethane systems was studied by DSC and MDSC. Tensile testing was carried out to determine the influence of fillers on the mechanical properties of PC-PU hybrids. Based on obtained results, the synthesized polyurethane materials showed improved thermal stability and enhanced thermal and mechanical properties.

Key words: polycarbonate, polyurethane, nanocomposites, synthesis, characterisation.

INVITED LECTURER
PREDAVANJE PO POZIVU

CRISIS: INDIVIDUALLY INTO A COLLECTIVE THROUGH THE PRISM OF ARTISTS

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ABSTRACT

Although we live in a time of various viruses, due to the state of emergency of the Kovid epidemic, we can ask ourselves what does this disease tell us as a society? Is it a collective detachment from our consumerist illusions imposed by the previous system? Is this disease a metaphysical warning to rethink social standards, or is it just another crisis that needs to pass? By examining the relationship between the two concepts: the concept of identity and the concept of deconstruction, as key to the problematic theme of the crisis, we come to the answer as to why this disease has triggered many other crises within us. By exploring the relationship between artists and crises, as well as artists who have survived kovid, we map various emotions that are a common point of all people regardless of country, race or gender. Crises occur on an individual or social level. At the individual level, they represent a change in a person's normal functioning. At the social level, we see a complex social situation in political, economic, social and cultural systems. ”3 The crisis, in this sense, refers to the problem of identity with the questions posed in his manifesto by Paul Gauguin:“ Where are we from? Who are we? Where are we going? ”.

Key words: crisis, identity, art.

***ECOLOGY, ENERGETIC EFFICIENCY AND GREEN
ENERGY
EKOLOGIJA, ENERGETSKA EFIKASNOST I ZELENA
ENERGIJA***

PERCEPTIONS AND ATTITUDES ON ORNAMENTAL FEATURES AND THE USE OF DIFFERENT CULTIVARS OF AFRICAN VIOLET (*SAINTPAULIA IONANTHA* L.)

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ABSTRACT

Since the 20th century a large number of cultivars of African violet (*Saintpaulia ionantha* L.) have been known. This species has soon positioned itself among the most popular house plants. African violet has been characterised by decorative heart-shaped leaves on long stems and different flower colours. Ready-to-use substrates are the best choice for its growth and development. During the summer period it prefers parts of the interior with a lot of light without direct exposure to sunlight. During bloom the violet requires moderate amounts of water, while after bloom it requires a reduced amount of water. In addition, during bloom African violet needs to be fertilised once a week. The species is primarily propagated through leaf cuttings or seeds. The primary source of information used in this work was also survey testing whose objective was to explore the perception and attitudes of the respondents on ornamental features and the use of different cultivars of African violet. The findings have shown that in terms of ornamental features the respondents slightly prefer the cultivars with a more special appearance of leaves and flowers, while from the aspect of use of violets in different interiors, the respondents prefer to use more classic types of cultivars of this violet species. The maintenance of the species is normally perceived as non-demanding. The previously mentioned preliminary research can be used upon interior landscape design and technologists can use it from the aspect of production and sale.

Kew words: African violet, cultivation, ornamental features, use, perception and attitudes.

ORNAMENTAL VALUES AND INVENTORYING OF VEGETABLE GARDEN PLANTS IN DECORATIVE PRIVATE GARDENS IN THE TERRITORY OF THE CITY OF KNIN

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ABSTRACT

Vegetable garden plants have always been an integral part of decorative gardens. They provide the garden with features of casualness, while simultaneously also being useful and ornamental if they are properly incorporated into the garden area. The paper presents the significance and the importance of vegetable garden as an integral part of the garden, as well as ornamental characteristics of individual vegetable garden plant types. The research segment of the paper provides inventorying of vegetable garden plant types in decorative private gardens in the territory of the city of Knin. Taxonomic analysis included 20 plant species, i.e. Angiospermae, all the species, which also includes Dicotyledonae (16; 80%), whose share is higher than that of Monocotyledonae (4; 20%) and they have been grouped in nine families. It is important to highlight the plant family Solanaceae that has the largest number of species (4 species).

Key words: Garden plants, ornamental characteristics, private gardens, inventorying, Knin.

CONTENT OF WATER SOLUBLE AND INTERCHANGEABLE FORM OF ZINC IN THE DUST ON THE MAIN ROAD M-17 THROUGH THE CITY OF MOSTAR

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ABSTRACT

The paper presents a study of the content of water - soluble and exchangeable forms of zinc in the dust on the main road M-17 through the city of Mostar. In the observed area, five localities were selected for the research of defined tasks. Dust samples were taken in one cycle (autumn 2018). The specified metal was determined in accordance with EU standards, using the instrument AAS (Atomic Absorption Spectrometry), type AA-6200-Shimadzu. method: FAAS-flame technique in determining the total zinc content and ETAAS-electrothermal technique in determining the water - soluble and exchangeable form of zinc. The results of the research show changes in the zinc content in different localities. The lowest zinc content was determined at the site of the Orthodox Church (Bjelušine) in the value of 28,33 mg / kg and the highest at the site Bišće polje in the value of 81,67 mg / kg. The concentration of water-soluble forms of zinc in the water extract was low and ranged from 0,52 mg / kg at the examined locality Bišće polje to 3,57 mg / kg at the examined locality Mazoljice. The content of exchangeable forms of zinc in acid extraction is the highest at the Bišće polje locality, 52,08 mg / kg, and the lowest at the Orthodox Church locality (Bjelušine) up to 9,51 mg/kg.

Key words: zinc, M-17 highway, soluble and exchangeable forms of zinc

ANALYSIS OF CO₂ EMISSIONS IN THE PUBLIC SECTOR, THE EXAMPLE OF THE CITY OF KRAGUJEVAC

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ABSTRACT

Local governments play an important role in fighting the climate changes, as much in reducing emissions as in raising the awareness of citizens in the fight against climate changes. By analyzing CO₂ emissions - from which sectors the largest emissions originate - it is possible to propose adequate measures that will contribute to the target values of CO₂ emission reduction.

The paper analyzes the extent to which the public sector affects the total CO₂ emissions in the entire city of Kragujevac. For the public sector, emissions from the district heating system, public transport and public lighting were observed.

Data on CO₂ emissions for the entire city were obtained from public companies that supply the city with heating energy and natural gas (for companies and households), while data for individual heating were obtained from the State Bureau of Statistics. Data on CO₂ emissions from traffic were obtained on the basis of registered vehicles in the city.

Key words: CO₂ emissions, public sector, district heating, transport, public lighting.

STRATEGY OF CONTROLLED RELEASE OF AGROCHEMICALS USING POLYMERIC MATERIALS

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Abstract: Continuous increase agricultural production with the application of agrotechnical means it has negative consequences on the environment and man. Improper and uncontrolled use agrochemicals in agriculture is one of the basic factors that negatively affect the state of environmental quality. To avoid unnecessary pollution of land and crops during agricultural production and to apply plant protection from diseases and pests, as well as supplying plants with nutrients that are needed for growth and development, is necessary controlled application of agrochemicals. One way of controlled release of agrochemicals is the application of specific polymeric materials that use as carriers of the active substance. The biological and chemical properties of agrochemicals and their physicochemical interactions influence the choice of a suitable system for slow or controlled release. The polymers most commonly used to encapsulate agrochemicals are acrylamide-based gels. Other polymers used are polyethylene, natural rubber, polysaccharides and cellulose-based materials, copolymers of VC-acrylic acid esters and copolymers of cyclopentadiene with glyceryl esters of unsaturated fatty acid. Originally, materials based on synthetic polymers were used as carriers for the controlled release of agrochemicals. However, the long period of degradation of synthetic polymers has led researchers to turn to the development of biodegradable polymer composites for the controlled release of agrochemicals.

Keywords: controlled release, agrochemicals, polymeric materials, agriculture.

CULTURAL HERITAGE AND NEW CULTURAL PRODUCTS IN THE FUNCTION OF SUSTAINABLE DEVELOPMENT OF LOCAL AREA

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ABSTRACT

Sustainable community development in Dubrovnik has to be based on the diversification of the tourist product, as well as on the responsibility to allocate and use resources wisely and in a way that is not harmful for the local community and which enables the implementation of new cultural knowledge. The aim of this paper is to explore the attitudes of local stakeholders towards the possibility of new cultural products development, based on long-term benefits. It includes the three-dimensional approach that incorporates economic, social and environmental concern. In order to explore the possibilities of new cultural products development, an empirical research was conducted using the method of semi-structured interview, included the sample of 48 respondents. The conducted empirical research has been part of the project "Skala - a new cultural and tourist destination in Komolac" which as an integrated development program, based on the restoration of cultural heritage. The content of the program thematically refers to the development of Komolac, the place located near Dubrovnik. According to the results of the research, it is evident that the stakeholders agree that there is a need for the new cultural products development, not only from the tourism development point of view, but also from local resident's life quality improvement point of view.

Key words: culture, new products, sustainable development, Dubrovnik.

THE EFFECTS OF MEDICINAL PLANTS USED AS SPICES

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ABSTRACT

The natural preparation are quite often in the prevention and healing of different health issues caused by oxidative stress (disbalance caused by production of endogenous reactive oxygen species and activity of antioxidative enzymes). The review of use medicinal plants with essential oils in the food and its effects on human health. The review of the bibliography from medical basis data.

The Antioxidative effect of essential oil of rosemary is compared with the effect of vitamin E (compounds 1,8-cineole and cadinene). Result of examination on mice which were on lipide-nutrition and dry rosemary leafs, was antiagregation and vasodilatation. The essential oil of rosemary aromatherapy on grown volunteers led to decrease in plasma level of hormon cortisol. The essential oil of lavender as the capsules Silexan, Germany, was very usefull as the anxiolytic. The essential oil of orange reduce the level of anxiety at the pregnancy. The essential oil of rose led to psychophisic and physiologic relaxation. At the animal models, the coriander and lavender essential oils compounds: (+)-limonene, alpha-pinene, camfene led to anxiolitic effects. Most often compounds in the essential oils do not reduce anxiety: cytrale, myrcene, terpene-4-ol. The use of medicinal plants with essential oils as a spices in the food has amount of effects on human organism, and it is necessary to search its all the effects after use by this way.

Key words: essential oils, medicinal plants, spices, food-medicinal plants interaction

THE ANTIOXIDANT EFFECTS OF ESSENTIAL OILS FROM MEDICINAL PLANTS USED IN FOOD

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ABSTRACT

The natural preparation are quite often in the prevention and healing of different health issues caused by oxidative stress (disbalance caused by production of endogenous reactive oxygen species and activity of antioxidative enzymes). The review of use medicinal plants with essential oils in the food and its expected antioxidant effects. The review of the bibliography from medical basis data.

The antioxidants inhibits lipids autooxidation with two type of reactions: introducing of H atom and making ione pair of electrons. The Antioxidative effect of essential oil of rosemary is commpared with the effect of vitamin E (compounds 1,8-cineole and cadinene). The amount of studies show that using extracts of rosmary in the different food products lead to inhibition of producing hydroperoxyde and prolong good quality of food as a colour, flavour and odour. On the other side, different studies of effects of essential oils as a antioxidants shows that essential oils with a large amount of compounds eugenol, as palmarosa and ginger essential oil, gives most effective antioxidation in DPPH assay *in vitro*. In the assay *in vivo*, the essential oil of clove which has a large amount of eugenol shows strongest inhibition to production of NO and it is cause of inhibition of damage of human cells. The use of medicinal plants with essential oils in the food has amount of antioxidant effects at the different level. It is possible that different extracts shows very different effects and it is necessary to aditionally search all the effects for its safe use.

Key words: essential oils, medicinal plants, antioxidant effect of essential oils.

TENDENCIES AND CHARACTERISTICS OF THE LEVEL OF DEVELOPMENT OF BUSINESS TOURISM IN DESTINATION OPATIJA

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ABSTRACT

Business tourism has attracted huge attention all over the world and is certainly considered one of the new and invaluable segments in the large family of tourism. This specific form of tourism is, with minor oscillations, a constantly growing segment of the tourist offer and demand and is in a constant process of innovation, creative movements, but also the growth of supply of new destinations and new capacities. Research in the field of business tourism in the Republic of Croatia and thus in the city of Opatija has no significant precedent. Therefore, in this study, as the aim of this paper is to highlight the issue of business tourism in the city of Opatija, and explore and analyse tendencies of its current development. The starting point of the paper is the hypothesis: "Demand for business tourism exists almost all year round, but is most pronounced in the pre-season and post-season, so it makes it a key factor in extending the tourist business of the destination." This research allows getting to know strengths and weaknesses of the business-congress offer, and by the generalizing of data perspective was obtained on business tourism of the city of Opatija. The survey was conducted in the city of Opatija on a deliberately selected sample and several international conferences in 2019. The relevant statistical programs IBM SPSS Statistics 22 were used for analysis and presentation results.

Key words: business tourism, business-congress offer and demand, destination improvement, the city of Opatija.

ECONOMY AND MANAGEMENT
EKONOMIJA I MENADŽMENT

AN INNOVATION FRAMEWORK– A CASE STUDY: “SIMPLIFY”

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ABSTRACT

In a world of increasing complexity and uncertainty business models that are successful and creating value are on constant challenge to embrace continuous changes and disruptions. In such a climate it is business necessity to find innovative ways for reallocating the resources and restructuring the competitive base. This re-invention should be seen as a deliberate series of transformations. Yet, it is quite tough to put in place a successful integrated design process that would enable such constant re-invention. The aim of this article is to propose a framework for implementing such transformation re-invention of the company by highlighting the importance innovation and human resources as its key enabler. A presented case study illustrates the use of the framework within the fast-moving consumer goods industry. The innovation framework specifically focuses on a holistic collaborative deployment environment, the roadmap for planning and deploying innovation all with aim to drive business transformation, as pointed through the case study.

Key words: Innovation, transformation, re-invention, human resources.

INFLUENCE OF SALES PERSONNEL ON CUSTOMER BEHAVIOR

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ABSTRACT

The authors of this paper deal with the analysis of the impact of sales staff in the car showroom on potential customers and their behavior in the process of buying a car. In this research, the focus is on determining the extent to which the behavior of sales staff and their expertise influence the behavior of customers themselves when buying a Škoda car. How their behavior and expertise affect the behavior of potential customers when visiting a showroom, getting to know the performance of the car, test drive, choosing models and equipment and finally making a decision to buy a car. The aim of this paper is to examine how much influence the sales staff in the car showroom has on consumer behavior, as well as what factors have a decisive influence on customers on making the final decision. The research was conducted on the territory of Republika Srpska, and the survey was conducted by calling the buyers of Škoda cars by phone.

The aim of this research is to show how much influence the sales staff of the car show has on the behavior of customers when buying a car.

The entire research is based on the confirmation of the set hypotheses. The results obtained by this research confirm that sales staff has a very significant influence, often decisive, on customer behavior and making the final decision to buy a car.

Key words: sales staff, customer behavior, car.

POSITIONING OF THE REPUBLIC OF SRPSKA INVESTMENT – DEVELOPMENT BANK AND ITS IMPORTANCE FOR FINANCIAL AND REAL FLOWS IN THE REPUBLIC OF SRPSKA

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ABSTRACT

Application of the concept of development banking represents a proactive approach to managing socio-economic priorities in national, subnational and transnational frameworks. Nowadays, many leading economies owe their development to these financial institutions and the efficiency they show in the allocation of capital resources to projects with a development feature, which makes them an unavoidable factor in the functioning of financial systems as a whole. The Republic of Srpska Investment-Development was established by the Republic of Srpska by opting for institutional centralization and professionalization of “asset management at the level of the Republic of Srpska with the aim of providing support to development and investment projects.” The bank started financial operations in April 2008 and since then has occupied a significant position in the domestic financial system. Following decades of experience, this paper aims to refer to the key determinants of the IRBRS, including an overview of the broader context in which it took place and the importance that the Bank has had for financial and real flows in the Republic of Srpska. Following an argumentative and fact-based discussion, in the concluding remarks we present some of our views on the future prospects of development banking, without limiting the applicability of the proposed measures mainly to domestic social and economic circumstances.

Key words: development banks, financial system, real deadlines, IRBRS.

ANALYSIS OF THE CIE BANKING SECTOR USING LINEAR PANEL MODELS

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ABSTRACT

The subject of this paper is the analysis of the CEE banking sector in the period from 2013 to 2019. The research was conducted on 13 countries in the observed region. The analyzed countries were divided into three groups during the research. The first group consists of countries that were among the first to join the European Union (Slovenia, Poland, Slovakia, Czech Republic and Hungary), the second group consists of countries that later joined the European Union (Croatia, Bulgaria and Romania), while the third group consists of countries that have not yet become equal members of the European Union and are negotiating to join it (Serbia, BiH, Montenegro, Macedonia and Albania). Emphasis is placed on the most significant business performance, such as: the level of non-performing loans (NPLs), the level of capital adequacy ratio (CAR) and the level of profitability, which is measured through return on assets (ROA) and return on equity (ROE). The aim of the research is to determine the general level of the most significant business performance, in order to see the mutual relationship and the degree of development of the banking sectors between the observed countries. The obtained data will be processed using linear panel models using the statistical program STATA. The statistical analysis will use the model with constant parameters (Pooled model), the model with individual effects fixed parameter (fixed-effects model) and Individual effects stochastic variable (random-effect model). The models will be tested using the Hausman and Breusch-Pagan tests.

Key words: capital adequacy, return on assets, return on equity, non -performing loans, fixed effects model, random effect model, Breusch - Pagan test, Hausman test.

DESCRIPTIVE STATISTICS AND CORRELATION OF CREDIT AND DEPOSIT POTENTIAL OF BANKS OF THE WESTERN BALKANS

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ABSTRACT

The banking sector is the most important financial institution that plays a significant role in the development of each country's economy. Banks are the most important participants in the financial market, because they are in the function of stabilization and development of a national economy. The basic three modern concepts of bank management are related to management: assets and liabilities of the bank, risks in banks, clients of the bank. A special contribution refers to the comparative analysis of the level of assets, credit and deposit potential of the banking sector of the Western Balkan countries in the period from 2008 to 2018. These are countries in transition and still making significant efforts to join the EU and become equal members. Among others, there are Serbia (SRB), Bosnia and Herzegovina (BIH), Montenegro (MNE), Macedonia (MKD) and Albania (ALB). The countries of this part of Europe are facing slow economic activity, which is a consequence of the lack of production. The price of banking products is significantly higher than in the rest of Europe. Descriptive statistics and correlation will be applied to the obtained data using the statistical program SPSS, in order to determine the connection between the analyzed balance sheet items. The balance sheets will be compared with the level of GDPpc in all observed countries.

Key words: GDPpc, balance sheet, loans, deposits, descriptive statistics, correlation.

CONSTRUCTION OF MODELS FOR ANALYZING AND MANAGING OF COMPANY GROWTH FACTORS

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ABSTRACT

Specific actions that condition the functioning of the company as the basic subject of the market economy are called economic factors. In order for a company to achieve a favorable market position, it is necessary to identify factors-potentials that affect the business, to investigate the effect and possibilities of influencing them. The criteria for classifying factors and potentials are numerous, and different authors single out a number of characteristics. What prevents the application of their knowledge is the design of a model for measuring each factor, whereby the user of the model decides on the weighting of the factors. Knowing the factors in terms of whether they will be used purposefully or exist as potential opportunities, helps to achieve better results.

The aim of the analysis is to notice the effect of individual factors, potentials and elements, and after identifying the direction and strength of each factor, quality decisions can be made. certain types of potentials, activated and used. Modern business systems are able to capture the influences of factors that would be assessed as less relevant in simple data processing. The aim of this paper is to show that no factor should be neglected, if untapped potentials can be activated, where the priority is the responsibility of management for their selection.

Methodologically, the identification of factors is focused on the theoretical postulate on the conditionality of business results by the action of factors and the potential of business success. Classified potentials were observed and their impact was analyzed. The research is aimed at forming the necessary set of information and indicators, in order to quantify the effect of factors and construct a growth model.

Creating growth goals, management should identify factors and potentials, explore their forms, and their impact on goals. To this end, management needs information on the effect of individual factors. Correlation of factors with potentials creates a basis for decision making. The range of indicators covered by the company's information system should be as wide as possible. The typology of factors must be exhaustive, where they do not exclude each other, but overlap or are difficult to distinguish. At the same time, a basis for constructing a strategic information system was created.

Key words: company growth, factors, potentials, indicators.

E-CUSTOMIZATION AND ELECTRONIC BANKING IN THE PANDEMIC OF THE COVID VIRUS 19

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ABSTRACT

The development of the Internet has caused numerous changes in the way modern man functions and has conditioned the creation of modern business media. Although the Internet is not a novelty, some of its segments have been expanding more in recent years. Hence, the concept of e-customization appears, which, although harsh in its sonority, defines each of us not only as a customer in the 21st century, but also as an Internet user.

E-customization was preceded by the development of e-banking as a segment of the everyday life of modern man. With easy payment methods and always available means of payment, e-commerce has developed.

Although the last major financial crisis that hit the consumer society began in 2008, its consequences were felt ten years later. However, 2020 brings a new economic crisis of global proportions caused by the pandemic of the COVID 19 virus. The new crisis has significantly affected the change in the structure and manner of consumption and business of modern man.

This paper aims to analyze the changing way of doing business of modern companies due to the new situation, as well as the role of electronic banking as a modern asset in the realization of business, putting the focus of the man of the 21st century as a consumer and provider.

Keywords: *e-customization, e-banking, internet, crisis, COVID 19 pandemic.*

VALIDITY OF TRILEMMA THEORY – PANEL ANALYSIS OF NEW EU MEMBER STATES

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ABSTRACT

This paper examines the validity of the “trilemma” theory which implies the inability to achieve the stability of the exchange rate, an independent monetary policy and free flow of capital at a given time. The theory is examined on the example of nine new EU member states. Bearing in mind that financial integration is a feature of modern economic trends; our first assumption is defined in such a way that the choice of the exchange rate regime has an implication on the monetary policy. This hypothesis is tested using the linear functional form proposed by Aizenman et al. (2013). The obtained results confirm the validity of the theory in nine new EU members from 2000 to the present day.

Keywords: “trilemma” theory, new EU member states.

THE IMPORTANCE OF FINANCIAL REPORTING FOR COMPANY MANAGEMENT IN INTERNATIONAL BUSINES

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ABSTRACT

The paper presents the importance and role of financial analysis in corporate governance, as well as the application and role of analysis of financial statements in the system of international business. This research presents how company management can use financial reporting and financial analysis information to stimulate but also control professional managers in running a company. Presentation of processed information to internal users who show the success of decision-making and the financial position of the company as a consequence of decision-making, accounting is done in the form of a balance sheet or financial report. This report, although created in accounting, is the responsibility of the company's management. The main theme of our investigation is how this financial reporting affects management as well as what is its role in making decisions concerning the business activities of the company. The desired results will be obtained by empirical analysis, on the basis of which an adequate conclusion can be defined in the end, i.e. the pre-set assumptions can be confirmed or possibly rejected.

Key words: financial report, international business, analysis, management.

SCOPE AND RESTRICTIONS ON THE USE OF CREDIT DERIVATIVES IN SMALL CAPITAL MARKETS

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ABSTRACT

Despite its widespread use, rating agency ratings, and high turnover, the market for credit derivatives is still considered new and insufficiently researched. In addition, the intensification of the 2008 financial crisis cannot be fully attributed to the use of credit derivatives, although they played a significant role in the spread of the crisis. Although the Capital Market Act provides for financial derivatives, credit derivatives have not yet been used in the capital markets of Bosnia and Herzegovina. In this regard, serious authorities in the field of financial management advocate the use of credit derivatives for risk transferring because it can significantly reduce the number of losses in the event of a credit event. This possibility gained importance after the shock caused by the coronavirus pandemic. In this paper, we examine the hypothesis that there is significant room for innovation in the domestic capital market. We have shown that it is possible and desirable to introduce credit derivatives on the market, and we state the scope and limitations, but we also identify obstacles to the introduction of such innovations.

Key words: investments, risk transfer, credit risk.

PROPERTY RIGHTS OF CHAREHOLDERS

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ABSTRACT

In this paper the authors consider and study a current and important topic related to the property rights of shareholders such as: the right to a dividend, the right to pre-buy shares, the right to participate in the liquidation and bankruptcy divide, as well as the right to dispose of shares. The basic motive for the founding of a joint stock company and the ownership of its shares are exactly the property rights that the shareholder acquires, and especially the right to split the realized profit, i.e. the right to a dividend, and a significant part of the work is dedicated to this issue.

Key words: shareholder, dividend, profit, stock market, liquidation and bankruptcy.

CAPITAL MARKET AS AN INSTITUTIONAL SPACE IN THE FINANCIAL MARKET

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ABSTRACT

The needs for long-term resources of economic entities can be met by generating their own accumulation or using the resources of other participants in reproduction. In the first case, it is about self-financing - investing retained earnings. In the second case, economic entities obtain capital by issuing debt or equity financial instruments to investors, owners of surplus capital, directly or through financial institutions. The transfer function, related to the use of long-term funds, is provided by the financial market segment - capital market. This market owes its name to the understanding that the funds that are returned to the investor in a longer period of time are capital, because they are used mainly for real investment, which provides an increase in income, ie an increase in social wealth in the long run. The aim of the research in this paper refers to the capital market, as one of the elements of the financial system, determined by financial instruments, as the material of financial transactions and financial institutions, as the main participants, ie. financial market transactions.

Key words: securities, market, investment, risk.

FRANCHISE AGREEMENT

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ABSTRACT

The title of this contract comes from the English word franchise, which means a special right or privilege. It is believed to have originated in the Middle Ages, when they received a royal privilege notable personality. The first manifestations of this agreement have been developed in the U.S. in the late 19th century in the production of oil and its derivatives, and later in other areas of industrial production, as well as the hospitality and tourism. Much later franchise agreement appeared in most European countries. In our business practices and franchising agreements appeared quite long ago, but its importance has come to the fore in recent decades when our companies emerge as the recipient of franchising in the automotive and consumer industries, as well as the hospitality and tourism. In recent years, it seems that our attempt to become economic entities franchiser in foreign trade and especially the countries that have gone through intensive development, such as some countries of Africa and Asia.

Key words: agreement, negotiation, compensation.

CONSEQUENCES OF THE IMPACT OF THE COVID-19 VIRUS ON THE AREA OF THE CITY OF EASTERN SARAJEVO

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ABSTRACT

Corona virus is a virus that appeared at the beginning of the year in the world and only a few months after its discovery, it appeared in Bosnia and Herzegovina and not long after in the city of East Sarajevo. The introduction of the state of emergency, the movement and monitoring of the number of patients, government measures and the demographic coverage of the sick and cured, as well as the economic situation, were monitored in the city of East Sarajevo in the period from the epidemic to June 8, 2020. As an under-researched virus that has caused consequences to the entire world economy and a great disagreement between countries, it implies questions such as: could the consequences we have been mitigated and were the measures implemented adequate? The subject of research interest in this paper is the analysis of the impact of Corona virus on the health system, demographic analysis of patients and subjects, as well as the analysis of economic consequences within the city of East Sarajevo. The concept of the paper is reflected in the measures of the Government of Republika Srpska and their results and comparison with the countries of the region in the observed period. The aim of the paper is to present indicators of health and economic indicators obtained by analyzing statistical data. In this paper, the aim of the research is to observe the consequences of Covid-19 on the city of East Sarajevo in various social, health and economic aspects.

Keywords: covid-19 East Sarajevo, influence of COVID-19 East Sarajevo, corona East Sarajevo.

INFLUENCE OF REMITTANCES FROM ABROAD ON GROSS DOMESTIC PRODUCT OF BOSNIA AND HERZEGOVINA

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ABSTRACT

Attention in this article is focused on the economic effects of emigration on the home country, and especially on the effects of remittances from abroad, which represent the most significant positive economic effect. After reviewing the negative and positive economic effects of emigration, an overview of the basic characteristics of remittances is given. The aim of this paper is to determine whether remittances from abroad have a statistically significant impact on the movement of the value of GDP of Bosnia and Herzegovina. In this context, the amount of remittances arriving in B&H, their share in GDP, structure by country of origin and the comparison of remittances from abroad with foreign direct investments were presented first, followed by the empirical part. In this part, the impact of remittances from abroad on the GDP of Bosnia and Herzegovina was examined using a multiple linear regression model with six explanatory variables.

Keywords: remittances, GDP, economic effects of emigration, Bosnia and Herzegovina

FORCE MAJEURE AND CHANGE OF CIRCUMSTANCES IN INTERNATIONAL TRADE – CONDITION FOR EXEMPTION FROM LIABILITY IN CASE OF BREACH OF CONTRACT

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ABSTRACT

The rapid technological development and the development of the global market continually contribute to the development of international trade as well as to the increasing the number of concluded international sales contracts. The conclusion of the sales contract always requires respecting the principle of "pacta sunt servanda", namely fulfilling the contract as it is written or as the parties have agreed. Furthermore, the international rules that regulate the sales contracts and the different national laws have incorporated provisions that exempt from liability the contracting parties when a breach of contract occurs as a result of certain circumstances that cannot be foreseen.

The exemption from liability of the contracting party, that has not performed its obligations, can be seen through the institutes of "force majeure" and "change of circumstances". The definition and application of these institutes differ in various national systems, as well as in the international sources that regulate the rights and obligations of the sales contract. Therefore, the paper aims to make a distinction between "force majeure" and "change of circumstances" in international trade through the analysis of the provisions of the United Nations Convention on Contracts for the International Sale of Goods (CISG), the Principles of European Contract Law (PECL), UNIDROIT Principles of International Commercial Contracts (UNIDROIT Principles), as one of the most significant sources of the sales contract in the international law and in Macedonian Law on Obligations as well.

Key words: force majeure, change of circumstances, international trade, international law, sales contract.

THE IMPACT OF POLITICAL ENVIRONMENT ON FOREIGN DIRECT INVESTMENT DECISIONS OF MULTINATIONAL COMPANIES

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ABSTRACT

The paper is dedicated to the political environment and its influence on the foreign direct investment decisions of multinational companies. The aim of this paper is to provide an understanding of the significance of the environmental factors in the host country, especially the political factors, on the foreign direct investment decisions of multinationals companies. It pays special attention to several main political factors that should be taken into consideration by multinational companies when deciding to invest in a certain host country, such as regional economic integration, government regulations, political risks, and corruption.

The applied methodology consists of qualitative research techniques, such as analysis, comparative analyses, and syntheses. On the basis of the obtained results, the contribution of the paper is reflected in the determination of the relevant political factors that affect the investment decisions of multinational companies. These factors affect the economic activity in a certain host country as well as on the activity of multinational companies operating within its borders. Therefore, multinational companies should be aware of the importance of the host country's political environment in their foreign direct investment decision process.

Key words: political environment, multinational companies, government regulations, political risk, corruption.

THE CHRISTIAN ORTODOX BANK – REALITY OR FICTION?

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ABSTRACT

This paper's subject of research is the possibility of introducing new form of banking trade and innovative banking services and products. The changes in perception of the bank role within society and change in trading focus, from speculation and „betting“ to authentic needs of man and for the man, pulling out of the shadows the forgotten Christian thoughts on economics. The term Christian economics is not new, but Christian Orthodox banks do not exist in our financial system, not even as a term. The goal of this research is to prove that there is a possibility of founding Christian banks, that can successfully operate based on Islamic banks model. There is a functional, religiously regulated banking in Islam. This acknowledged model and experience of the Islamic bank are excellent starting point not only for setting the principles of work but also for defining banking products and services. The bank conceived in this manner, applies conventional and Islamic bank's positive practice and work experience, thus merging them into a unique shape characteristic of the Christian Orthodox faith. Since the operating of the bank does not depend on economic reality of a country, in this paper I have set some universal foundations on which a bank should lay, using general methods and techniques of scientific research. The conclusion is that the business model of the bank is a morally and ethically driven universal bank, with the role of an investor and trader, whose goal is not only profitable operating but an overall socio-economic progress of the society. This proactive, market-oriented bank, can operate in accordance with existing Law on banks and, as a qualitative alternative to conventional banks, with its partnership and risk-sharing model, can contribute to further stability increase of the financial sector and at the same time increasing the efficiency and productivity of the real sector.

Key words: Christian Orthodox bank, Islamic bank, Christian economics

ACCOUNTING PLANNING IN THE FUNCTIONING OF EFFECTIVE ENTERPRISE MANAGEMENT

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ABSTRACT

The conditions for successful business and business operations in general are accounting planning. The objective of accounting planning is to project estimates in regard to achieving the management control. The essence of accounting planning is reflected in the data that is the subject of accounting records. Together with bookkeeping, accounting planning is an activity of accounting monitoring of a business. Accounting planning is also the essence of a planning process that is more comprehensive and broader in business. Accounting planning through systematic functioning directs and includes planning of flows of profitability, liquidity, capital investments and financial structure and regular setting of plans: balance sheet or results plan, liquidity plan, capital investments and balance sheet plan ie. financial structures.

Keywords: Accounting planning, Planning, Bookkeeping, Income statement, Liquidity, Capital investment, Balance sheet.

INSTITUTIONAL ASPECTS OF MARITIME PORTS ADAPTATION TO GEOGRAPHICAL EXPANSION OF TERMINAL OPERATORS

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ABSTRACT

The emergence and rapid development of global container terminal operators (controlled by large multinational companies) have led to a significant increase in the terminal and transshipment industry. The subject of research in this paper is the interactive action of institutional factors from two perspectives: the *first* is related to the strategies of global expansion of terminal operators and the *second* to the influence of national and local institutional frameworks and political tradition. The aim of this research is to present that all business changes related to the institutional reform of seaports, their terminals and global operators (which are directly related to the business of seaports) directly and indirectly depend on broader institutional frameworks (formal and informal). Global expansion of port operators is carried out by the usual strategies: the purchase of new terminals and mergers and acquisitions of existing capacities (facilities and equipment). The importance of seaports and the application of integrated logistics in them is constantly growing. Seaports must adapt to changes in the global maritime market by increasing the size of their infrastructural and superstructural capacities, constant technological and information improvement, cooperation with logistics providers and the integration of their logistics functions. Decision makers in ports, terminals and operators must adapt to changing circumstances. In these settings that take place over time, the institutional environment occupies a significant place. The main reform goal of ports, terminals and operators is to reduce transaction costs. Institutions harmonize standards and procedures of operational practice and structure relations between economic entities (partners), promote the efficiency of transactions between them, minimize distributive conflicts, conduct monitoring and define penalties for opportunistic behavior.

Key words: institutional framework, seaports, terminal operators, integrated logistics.

PERSPECTIVES FOR DEVELOPMENT OF SPORTS TOURISM IN MONTENEGRO

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ABSTRACT

Sport and tourism have developed two interdependent socio-economic phenomena of modern society, which require constant renewal and accommodation to the increasingly discerning requirements of modern tourists. Previous experiences from all around the world, as well as acquired knowledge from the neighboring countries, show that investments in sports and recreational tourism are smart and profitable investments. The goal of the research is to prove that the development of mass tourism in Montenegro had produced a unvaried offer, which could not provide a long-term successful presence of certain destination in the global tourism market. Having in mind numerous natural and social resources, sports tourism has a particular chance for successful development, especially since various national institutions and economic subjects within the tourism industry have realized that faster development of sports tourism and its adaptation to long-term applications in the international market of sports tourism can accelerate the economic development and growth of Montenegro to a significant extent. The new concept of tourism must be able to respond to an increasingly obvious fact that first of all the guest chooses a place for his vacation, a place to rest according to the offer outside of the boarding house facilities, and only then chooses the hotel where he will stay.

Key words: Sports tourism, offers in sports tourism industry, demand in sports tourism, management.

INFORMATION TECHNOLOGIES AS BUSINESS SUPPORT TO THE SERVICE SECTOR IN THE REPUBLIC OF SRPSKA

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ABSTRACT

The service sector in Republic of Srpska, whether we talk about state institutions or the private sector, has undergone significant changes in the past decade under the influence of modern technologies. Of course, the public sector, due to its organization and the nature of its functioning, is not as proactive as the private sector, which certainly does not mean that digital transformation will bypass state institutions. The aim of this paper is through a practical example of the service sector in the Republic of Srpska to show the importance of using information technologies and its role in employee productivity. In recent years, the authors of the paper have been the carriers of the digitalization process of the service sector of the Republic of Srpska, and the paper is a systematization of knowledge and experiences from the public and private sector. We will explain the basic causes that lead to the unproductivity of certain parts of the service sector of the Republic of Srpska, and then present business models that can overcome the current problems. The significance of the paper is primarily reflected in the presentation of business process management models with the help of information technology that stakeholders could apply in their future work.

Key words: Digitization, service sector, information technology, health care institutions.

IMPLEMENTATION OF DIGITAL TECHNOLOGIES IN INTERPRETATION OF THE CULTURAL PRODUCT

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ABSTRACT

According to the results of previous researches, it is clear that there is a need for availability improvement and new of cultural products interpretations forms development in the city of Dubrovnik. The aim of the research was to define the state of availability of a cultural product and connect the same with the possibility of improving the placement and increasing the accessibility of cultural products, both based on the implementation of virtual (VR) and augmented reality (AR). According to the results of secondary and primary researches, it is evident that the current situation is not satisfactory and that virtual and augmented reality provide new market opportunities. Museums in Dubrovnik, despite the great number of artifacts, are not at the level of educational museums, so in this regard, the implementation of digital technologies could help to change product-oriented approach into a customer-oriented approach and make the cultural products more accessible and attractive for different market segments.

Key words: virtual technology, cultural product, availability, improvement, Dubrovnik.

IMPACT OF FOREIGN DIRECT INVESTMENTS ON THE ECONOMIC DEVELOPMENT OF BOSNIA AND HERZEGOVINA

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ABSTRACT

Foreign direct investments represent a very important part of the economic growth of any economy, especially developing countries. They have several positive effects, such as reduction in unemployment, an increase in disposable income, an improvement in the country's external financial position, and a more favorable credit rating. The paper points out the concept of the international capital movements, it presents the differences between portfolio and foreign direct investments and shows their positive and negative sides. A comparative analysis was performed by observing and comparing movement of foreign direct investments in Bosnia and Herzegovina in the period from 2004. to 2019. The initial hypothesis of the paper is the assumption that foreign direct investments have statistically significant impact on the economic development of Bosnia and Herzegovina. This has been proved by applying a multiple linear regression model in the empirical research part.

Keywords: foreign direct investments, economic development, gross domestic product.

LAW AND SECURITY SECTION
PRAVO I BEZBJEDNOST

MONITORING THE PROTECTION OF CHILDREN'S HUMAN RIGHTS IN BIH

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ABSTRACT

The main intention of the work is to create an appropriate process for monitoring the human rights of children and a system for improving the perception of the problems faced by children in Bosnia and Herzegovina, especially in cases of violation of the Convention on the Rights of the Child. Although Bosnia and Herzegovina has made progress in the realization of children's rights in the last 25 years since the adoption of the Convention on the Rights of the Child, there are still serious and numerous problems, the ombudsmen said on the occasion of Children's Week, adding that children and their rights are not priority in B&H. However, children rarely turn to ombudsmen, which certainly indicates the fact that much more needs to be done to promote children's rights, ombudsman institutions and empower, encourage children to take more active roles in their communities - school, family and the like.

Key words: Human rights, Convention on the Rights of the Child, Protection of the rights of the child

CUSTOMS UNION IN COMPARATIVE PRACTICE

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ABSTRACT

In the context of historical, economic and contemporary international legal sources, it is revealed that the elements covered by the concept of customs union differ. As a consequence of the conceptual diversity and legal flexibility of the laws of the World Trade Organization - WTO, in practice there is a great diversity of customs union designs - CU. Different CUs approach key design issues and tensions, from on the Preferential Trade Agreement - PTA negotiations to regulating the origin of goods, in different ways. Common to all conceptualizations around CUs is a concern about state sovereignty that affects how CUs are designed and how they operate. Such concerns usually lead to the formation of CUs that are not in line with the idea of a “perfect customs union”. Even if there is no perfect CU, poor performance occurs especially when the relationship between the internal and external aspects of the CU is not synchronized.

Key words: Customs Union, World Trade Organization, Comparative Perspective of Customs Unions

CURRENT FORMS OF DOMESTIC VIOLENCE IN THE REPUBLIC OF SERBIA

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ABSTRACT

We classify domestic violence as a very complex and current theoretical-practical social problem, primarily because it is a crime that encroaches on the field of psychology, law, sociology, criminology and other social sciences.

In the previous period in our country, there was an escalation of violence in every form, and domestic violence should be especially emphasized. As a product of that violence, we have an extremely large number of victims of violence who have gone through the victimization phase and to whom we must provide adequate protection and assistance in order for them to feel safe. Victims of domestic violence can be anyone, women, children, husbands, parents, relatives. Considering this problem from the victimological aspect, victims of domestic violence suffer physical, psychological, economic, sexual and other violence, and for that reason they need adequate help. In order for the victims of violence to feel safe and secure, it is necessary to coordinate all social subjects, and above all the police, prosecutor's offices, courts, centers for social work and other relevant institutions, as well as the entire social community. Banning the victim from the abuser is only the first step in helping the victim. Also, one of the types of protection is to place victims of violence in safe houses until another safe solution is found for the victim. The security measures for the protection of the victim of domestic violence that are applied are aimed at stopping the violence, preventing its recurrence and absolutely protecting the rights of the victim and thus helping the victim to continue with a normal life in the community.

Key words: domestic violence, victim, help, protection.

CIVIL PROTECTION AS A SEGMENT OF SECURITY IN LOCAL COMMUNITY

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APSTRACT

A man, individually or as a part of society, in the past faced different dangers and threats to his personal safety and safety of his property. Until the mid of the 20th century the greatest danger to states, men, material and cultural assets was war. After the development of science, technique and bigger trafficking of goods and services, development of the whole society, the most often threats to man and normal functioning of the society are natural disasters like floods, mudslides, earthquakes, winds, fir etc. For this kind of safety threats to people and property, aside from other subjects of security, civil protection takes central position. Its role is recognizable not only local or on state level but on international level as well. As a segment of security civil protection has always existed as mans follower and guarantor of survival but in different from and with different actions. This paper has a goal to point out significance and role of civil protection on all levels of organization and especially in the local community its organization and actions, and this paper will also show historical development and its connection to local government and civil defense. This paper will also point out the necessity for its existance locally, in regards to that level of organization of population, people exercise their rights and satisfy their basic needs.

Key words: civil protection, safety, civil defense, local community, local government.

INTERNATIONAL PRIMARY AND CRIMINOGENIC ASPECTS OF THE MIGRATORY CRISIS IN BOSNIA AND HERZEGOVINA

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ABSTRACT

Thousands of migrants from various Asian countries have been staying in Bosnia and Herzegovina for several years. Their movement to the desired destination stopped in Bosnia and Herzegovina due to the impossibility of entering the countries of the European Union. With their arrival, stay in Bosnia and Herzegovina, the migrant violates numerous international first movements of citizens in sovereign states, starting with illegal entry into the state, lack of valid documents, non-registration of residence, etc.

For a long time, the competent state authorities at the level of Bosnia and Herzegovina have failed to find a successful model for resolving the migrant crisis. They are mostly satisfied with "partial" solutions, shifting responsibility to each other, without the ultimate real desire and success to provide security to the citizens of Bosnia and Herzegovina in the areas where migrants live.

From the criminological aspect, the stay and behavior of migrants is especially problematic. Namely, there are numerous crimes committed by migrants, such as theft, aggravated theft, endangering safety, murder, bodily injury, etc. The paper will present the current period of international legal norms, as well as the degree of criminogenic of residence and behavior of migrants in Bosnia and Herzegovina, especially in the Una-Sana Canton, where this problem is most pronounced.

Key words: Migrants, international law, Una-Sana Canton, crime, residence, theft, murder

IT SECTION
IT SEKCIJA

BLOCKCHAIN TECHNOLOGY CHOICE FOR THE IMPLEMENTATION OF THE SOFTWARE SOLUTION IN A SPECIFIC AREA OF SERVICES OR INDUSTRY

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ABSTRACT

In the modern software industry, which is in constant expansion, the problem of trust between different users of the software solution is becoming increasingly dominant. End users want to be completely sure that the product or service is fully compliant with their requirements and that the quality does not deviate from the selected or ordered product or service. Manufacturers or service providers, on the other hand, want to have complete information about the quality of raw materials or infrastructure they provide in order to create products and services, which should be provided by the appropriate supplier. All participants in the software solution (actors) as an imperative have the security of their own data that is stored, processed and exchanged within such software system.

The aim of this paper is to demonstrate the application of an innovative approach in the storage, processing and exchange of information using blockchain technology with a case study on the supply chain. There are different approaches and in the first step the corresponding ones will be compared: Ethereum and Hyperledger Fabric blockchain network / platform. After selecting the appropriate technology, the work will focus on examining the potential security solutions that blockchain technology provides for the needs of the use case. This means that it is first necessary to explain the specific concepts of blockchain technology, then make a use case model, describe it in detail and deepen it to an adequate extent, and finally test some hypotheses related to improving transparency, information integrity, maintaining network security, maintaining effective initiatives for participation and defence against bad motivations of all actors within the system.

Key words: blockchain, software system, platform, trust, actors.

METHODOLOGICAL BASIS OF DESIGNING, IMPLEMENTATION AND ADMINISTRATION IOT

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ABSTRACT

In this paper all methodological phases are represents, through which a single project of implementing an IT system should be taken through. A theme specifically is describing all methodological phases with practical examples during design, implementation and maintenance of the Internet of Things (IoT) system. Author's own work was used called „Smart House“ which was implemented for a test project. It covers methodological phases of diagnostics, analysis, design, development, sending into production, use and maintenance of the IoT system.

Key words: IoT system, methodology, methodological phases, project.

SECURING CAN BUS COMMUNICATION WITH SYMETRIC KEY ENCRYPTION

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ABSTRACT

This paper describes analysis of the response time of messages exchanged between two electronic devices via the CAN BUS and whether and in what way different crypto algorithms affect the response time. This research includes statistical analysis of the response of messages exchanged between 2 ECU devices connected to the CAN BUS and measurement of the influence of the number of messages and different algorithms for encrypting messages on the response time.

Key words: CAN BUS, CAN protocol, Symmetric Key Encryption.

CYBER ATTACK AND THREAT PROTECTION

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ABSTRACT

This paper covers technologies needed for protection of an IT System. Cyber attacks are more frequent then ever and lots of attention should be given to protection from these attacks. This paper covers basis of protecting an IT system and data.

In today's business a competitiveness is maintained mainly by high quality back-office processes and large automatization of those processes. For automatization of business processes an IT system is mandatory.

Key words: Information safety, information system, data, information equipment, computer network.

ENGINEERING, TECHNOLOGY AND MATERIALS
INŽENJERSTVO, TEHNOLOGIJE I MATERIJALI

MICROEMULSION SYSTEM AS A POTENTIAL ENCAPSULATION SYSTEM OF ASCORBIC ACID

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ABSTRACT

Microemulsions are clear, thermodynamically stable, isotropic liquid mixtures of oil, water and surfactant / surfactant mixture. Ascorbic acid is an essential nutrient involved in the repair of tissue and the enzymatic production of certain neurotransmitters. As ascorbic acid in solution undergoes rapid oxidation, its use in pharmaceutical products is limited above all by its low stability. In this study, surfactant mixtures containing Span 80 with Tween 80 series at various ratios were prepared with isopropyl myristate and water to produce “water in oil” microemulsions. The best results and largest microemulsions area result at 70:30 Span 80/Tween 80 ratio. Further, a microemulsion isopropyl myristate /water/mixed surfactant (59.8:8:32.2 by weight) was selected from the constructed phase diagram for further physical characterization. The microemulsions sample had a droplet size distribution with a PDI value of 0.1883 and droplet size of 44.78 nm which indicates that a stable microemulsion was formed. The visual examination experiment was carried out over a period of 3 months in daily intervals for the first 1 months and weekly intervals for the subsequent months. The visual observation showed no evidence of phase separation or any precipitation or flocculation. The selected microemulsion sample will be used for encapsulation of ascorbic acid and to study the oxidation stability.

Key words: microemulsions, oil, encapsulation, ascorbic acid.

CONDUCTOMETRIC STUDY OF LIGAND STRUCTURE INFLUENCE ON THE Pb(II) COMPLEXATION WITH CROWN ETHERS

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ABSTRACT

The conductometric study of ligand structure influence on the Pb(II) complexation with crown ethers in different solvents has been investigated. In this paper, the complexation reaction of macrocyclic ligand, 18-crown-6 (18C6), dibenzo-18-crown-6 (DB18C6), and Pb(II) cation was studied in different solvents: dichloromethane (DCM) and 1,2-dichloroethane (1,2-DCE). The effects of surfactant structure (Triton X-100 and Triton X-45) on the conductivity of the Pb(II) complex with 18-crown-6 and dibenzo-18-crown-6 ether have been investigated. The conductance data showed that the stoichiometry of the complexes in most cases is 1:1(ML). It is also demonstrated that the influence of crown ethers is deeply affected by the organic solvent used. In the solvents studied, the stability of the resulting complexes showed higher stability in dichloromethane comparing with 1,2- dichloroethane. Macrocyclic ligand 18-crown-6 showed more suitable for complexation of Pb(II) ions compared to dibenzo-18-crown-6. Adding a surfactant affected the higher absolute values of the conductivity of systems, but not the change in the stoichiometric ratio between a metal ion and macrocyclic ligand.

Key words: crown ethers, conductometry, Pb(II)

EFFICIENCY OF SODIUM DODECYL BENZENE SULFONATE IN REMOVAL OF Pb(II) IONS THROUGH BULK LIQUID MEMBRANE SYSTEMS

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ABSTRACT

In this paper, the influence of the anionic surfactant, sodium dodecyl benzene sulfonate (SDBS) on the efficiency of Pb(II) ions removal through a bulk liquid membrane system, were investigated. Different organic solvents were used as liquid membranes: dichloromethane and chloroform. Macrocyclic ligands: 18-crown-6, dibenzo-18-crown-6, dicyclohexano-18-crown-6, and benzo-18-crown-6 dissolved in organic solvents were used as carriers for Pb(II) ions. Metal ions concentration in aqueous phases was monitored by flame atomic absorption spectrophotometry, after 3 hours of membrane transport. The results showed that the presence of the anionic surfactant SDBS in the receiving phase reduces the content of Pb(II) ions in the source phase and increases the transport rate removed Pb(II) ions to the receiving phase. Among the applied solvents, the highest efficiency in the role of liquid membrane showed dichloromethane, for all applied macrocyclic ligands. From the aspect of the used macrocycle, the addition of an anionic surfactant in the receiving phase with dichloromethane reflected in an increased amount of removed Pb(II) ions from the source phase, following the order: 18C6>B18C6>DCH18C6>DB18C6. Chloroform as a liquid membrane reflected also in an increased amount of removed Pb(II) ions from the source phase, following the order: 18C6>DB18C6>DCH18C6>B18C6.

18-crown-6 (18C6) compared to other ligands proved to be a selective and efficient carrier for the transport of Pb(II) ions via BLM, removing 71% of transported Pb (II) ions from the source phase through dichloromethane while chloroform slightly lower transport rate (63.4%) was achieved for the same used macrocycle.

Key words: sodium dodecyl benzene sulfonate, Pb(II) removal, bulk liquid membrane

APPLICATION OF THE DECISION TREE TECHNIQUE IN THE ANALYSIS OF TRAFFIC ACCIDENTS

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ABSTRACT

The aim of the research is to examine the possibility of applying Weka software in the process of analysing traffic accidents that occurred in the territory of the Republic of Serbia. During the analysis, the J48 algorithm of the decision tree technique was applied. The database of traffic accidents from 2019, in which a total of 35,956 accidents were recorded, was taken over from the portal of open resources. The analysis of the same in Weka software, and the application of the mentioned algorithm, it came to the results, which showed that a large number of instances of the downloaded database were incorrectly classified. The reason for this is the inadequately standardized database model used in the research. In conclusion, the dominant thesis is that, in order to obtain useful information from databases, they need to have a clear and logical structure, as well as standardized elements for entering the value of attributes.

Key words: Mining; extraction; traffic accidents; decision tree; J48.

APPLICATION OF THE CRITERION OF TECHNOLOGICAL DAMAGEABILITY IN MECHANICAL ENGINEERING

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ABSTRACT

Development and implementation in mechanical engineering practice of integrated information systems for control of technological processes of manufacturing products is the main driver of economic growth of developed countries. The priority of modern engineering technology is to provide the specified operational characteristics of products in accordance with the accuracy parameters, set by designer and quality of surface layers in contrast to achieving the minimum technological cost with maximum performance for traditional approaches. Technological providing of the main operational characteristics of the product (bearing strength, wear resistance, fatigue strength, joint strength etc.) require a systematic approach, which consists in the investigation of real physical processes at sub microscopic, microscopic and macroscopic levels of research, and step-by-step tracking required parameters at all stages of the Product Life Cycle from the position of technological inheritability. It is proposed to use the method of LM-hardness to control the quality of the structure of the material from castings in the design of functionally-oriented processes. The magnitude of the technological damage of the product material serves as a criterion for optimization when choosing a variant of surface treatment of the casting. A method for providing experimental studies of castings of aluminium alloys has been developed. On the basis of the carried-out experimental researches the rational route of processing of surfaces of casting is chosen.

Key words: surface engineering, technological inheritability, functionally-oriented process

BASICS OF AUTOMATION OF PROFILING OF HIGH-EFFICIENCY INSERTS OF THE TOOL FOR THREAD MACHINING

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ABSTRACT

Many modern threaded joints, especially in the oil and gas industry, must satisfy high requirements for steel mechanical properties of which they are made. To ensure efficient threading of such hard-to-machine materials (ultimate strength is more than 1250 MPa), it is necessary to use carbide cutting inserts with the negative rake angle at its corner. However, modern manufacturers of such inserts make them only with a zero value of the rake angle. This is due to the difficulty of profiling of the insert cutting edge. This article proposes the basics of such inserts automatic profiling which is based on the algorithm developed by the authors. It includes two corrective calculations of the insert cutting edge profile, namely: the radial displacement of the corner and the tangential displacement of the area forming the crest of the thread. As a result, the computer application with the input parameter of the rake angle and output parameter of the upgraded profile of the insert cutting edge is received.

Key words: profile of the cutting edge, negative rake angle, machining of thread.

LOGISTIC CHAINS IN PORT TRANSPORT

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ABSTRACT

Globalization and significant containerization growth have changed maritime transport and logistics chains, making ports an integral part of complex supply chains and serving as logistics hubs, adding value, connecting flows and influencing supply chain forms and processes.

The competitiveness of a port is determined by its own strengths such as efficient cargo handling and connection to the interior of the country, and its position and links in global supply chains.

Over the last two decades, ports have transformed their role from traditional regional gates to a place where value and logistical activities are realized. Ports have played and will continue to play a crucial role in the sustainability of logistics and supply chains. Of the many nodes in global supply chains, ports play a key role in enabling the continuous flow of goods between the so-called entities. supply chains.

Studying the traffic function of port systems from the aspect of logistics enables a comprehensive overview of the economic advantages that are offered and in which the port integrates all traffic forms of transport, satisfying the needs of users and the environment. In addition, by studying the uninterrupted flow of cargo on the way from the sender to the recipient, the interdisciplinary approach of the participants in its distribution creates a transport chain in which the port is one of the most important links in terms of distribution and logistics.

By researching the importance and position of the port system from the logistical aspect, the organization and success of cargo distribution in the port and hinterland can be directly influenced.

Key words: transport, port, trade chains

EVENT SPACE IN WHICH WE PLACE AN INCLUSIVE SPECTACLE

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ABSTRACT

Art and engaging in inclusive art is the starting point for articulating "our" personal emptiness, because we live in a time of individualism, existentialism and capitalism. We see our own inner existential emptiness in space as the biggest social problem of all individual's existential emptiness. The individual in modern society has an existential void which is being filled by art. The event as a central theme, shown through two levels. The first level of events is to be like me, as it was created on the level of the body and it makes sense to change from both discourses in order to enchant with a world that has been fundamentally changed and which makes a kind of event. The second level is the inclusive level (I put the subject in the intellectual role of an inclusive being), an event that eludes us all the time. The event is the center. An event that has been displaced from physical space and is located in two other places at the same time. It takes place in the virtual world as the starting point of its creation (vectors and pixels) and in the inner world of actors and audiences as the bearer and receiver of events. We are influenced by the change of discourse from one system of meaning to another. The changes of dominant values, that occur in the 21st century, are being widely accepted under the influence of networking and technology. I came to the conclusion that, as an artist, I created an event with all my previous experience of the world and art, and under the influence, a mixture of media production. Observers, as the ultimate bearers of the event, are confronted with an artifact that is a product of the dispositive. This paper is a kind of critique of global networking and current events. Are we always trying to see what is happening? Events are more complex than what they present to us. In this work, I am creating a kind of a shelter, a "house of pixels", as a display of an inclusive type of cultural spectacle.

We (civilization) have kept a man alive in swimming, that actively creates electricity, which is now moving opposite to the starting point, but he is still floating on that water. When we identify the word culture with nature here, we come to the conclusion that there is a discontinuity between us and the environment, between us (subjects) and living nature. Instead of the word nature, today we use the words: network, internet, new technologies, platforms, 3D print. By creating a kind of enclave, we try to save ourselves from the current event, which we can interpret only by observing and actively participating in it, and thus helping others see the picture of the world through their own interpretations of the actualization of events.

Keywords: Event, event experience, dispositive, mixture, pixel house, enclave, change of discourse.

MECHANICAL ANALYSIS OF THE ROTATING DRAWING MANDREL WITH SELECTED BEARINGS CONFIGURATION

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ABSTRACT

Nowadays is important to increase power efficiency in the heat production sector. Tubes with shaped internal surface are one of the possibilities to improve efficiency of heat exchangers. In the fact of this is actual to look on the improvements of the process of forming from the perspective of the tool construction. Presented article is focused on mechanical analysis of the rotating mandrel for cold forming of tubes with shaped internal surface. As a proposed material of the tool was selected heat treated tool steel. Analysis were performed with selected configuration of the bearings. One bearing was configured as radial and second bearing was configured as radial-axial. Results shows stresses in the mandrel and deformation of the mandrel under a load of forming pressure. Obtained result have potential to enhance knowledge in the area of construction of the forming tools. This research was supported by grant VEGA 1/0682/17.

Key words: Forming, tube, mandrel, bearing, stress.

PARTIAL ANALYSIS AND DESIGN SPECIFICATION OF SEGMENTAL ROBOT GRIPPER EFFECTOR BY HIGH-FEED MILLING

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ABSTRACT

Elimination of production times is a broad-spectrum issue that is addressed by every manufacturing company, not excluding the engineering industry. Continuously increasing demands on the safety of manufacturing processes and production accuracy can be achieved only by achieving the complexity of the machine - tool-workpiece - jig system. One of the parameters of the system complexity, which ensures precise and fast machining is the jig which forms an irreplaceable part of the production process. The presented article describes the partial analysis and design specification of segmental robot gripper effector using advanced technologies. Introduction part of this article describes theoretical approaches of issue and state of the art. Material and Methods provides the creation of a design solution with basic parameters specification. The main part of this article presents a description of the analysis and design specification of segmental robot gripper effector, which is produced by high feed milling technology with a final summary of the obtained results. This research was supported by grant KEGA 025TUKE-4/2018.

Key words: high feed milling, design, robot gripper effector.

WOOD PLASTIC COMPOSITES: TECHNOLOGIES

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ABSTRACT

Current trends in the field of ecology encourage manufacturers to create materials that are environmentally acceptable, but also customer have requirements on the properties of the applied materials and their durability. In the fact of this reason, in some branches of industry (floor / automotive / construction) are created "Green materials", created by combining a plastic matrix (mostly PP, PE, PVC) and natural fibers. One of these materials are the Wood Plastic Composite (WPC) materials - wood-filled plastics (as an alternative solution). The WPC components (matrix + reinforcement + additives) are mixed under the influence of high temperature into a mixture followed by a forming step. Forming technologies suitable for WPC products include extrusion, injection molding and calendaring. The presented paper is focused on the possibilities of WPC profile forming technologies. This research was supported by grant KEGA 030TUKE-4/2018.

Key words: Wood plastic composites, natural fibers, technologies.

CREATION OF COMPREHENSIVE SPECIFICATION OF SPECIAL CNC MACHINE DESIGN SOLUTION

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ABSTRACT

The conventional CNC machines are based on known design solutions in which the main production material is steel. At present, the field of material engineering has a wide range of new materials which raises the question of whether these materials can be used as a design element for CNC machines. At the same time, it is necessary to aware that it is required to develop special construction procedures for these materials. This paper focuses on the creation of comprehensive specifications of special CNC machine design solutions. The introduction part of the article provides a theoretical level of issue general knowledge and subsequently in the next part is described the specifications of design solutions of special CNC machines with a practical example of a selected example. The conclusion of the article is devoted to a comprehensive summary of the issues. This work was supported by the Slovak Research and Development Agency under the contract No. APVV-15-0700.

Key words: CNC machine; polymer concrete; design solution.

INTEGRATION OF QMS PROCESS APPROACH AND INFORMATION SYSTEM

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ABSTRACT

Successful functioning of the quality management system (QMS) requires complete documentation of business processes. The level of application of information technologies in business processes is not defined in the ISO 9001 standard. Modern business dictates the presence of information technologies in all business processes, including the quality management system. The aim of the research in this paper is that the information system should include and integrate the quality management system according to the requirements of the ISO 9000 series of standards. for the development of a QMS information system model based on the concept of a process model. The result of the paper explains that the integration of business processes related to the implementation of QMS supported by the information system can be a process model that is one of the basic principles of QMS, which is implemented through the use of integrated information resources for analytical processing.

Key words: process model, IDEF1X, IDEF0, information system, analytical processing

CCPM OPTIMIZATION OF PROJECT SCHEDULING

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ABSTRACT

Project managers face difficult decisions with regard to completing projects on time and within the project budget. In the real world, project activities are subject to considerable uncertainty, which affects the performance of project scheduling management. The Critical Chain Project Management method (CCPM) is applicable to monitor changes and uncertainties. This method uses buffers to protect the critical chain and project from the disruptions. The buffer sizes reflect the uncertainty in the estimation of project duration and affect the project scheduling performance. In this paper, a real-time project is scheduled using both traditional CPM and CCPM methods to identify the optimal scheduling technique for a construction project. The experimental results indicate that application of proposed CCPM method leads to 22,73 % shorter durations of projects compared to CPM schedule.

Key words: Project scheduling, Optimization, Buffers, CCPM.

***PSYCHOLOGY, SOCIOLOGY, PEDAGOGY AND
ANDRAGOGY
PSIHOLOGIJA, PEDAGOGIJA I ANDRAGOGIJA***

THE INFLUENCE OF THE SOCIO-ECONOMIC STATUS OF THE FAMILY ON THE LEVEL OF STUDENT ACHIEVEMENT

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ABSTRACT

Social changes at the global level, changes in the economic system, the changed structure of the need for professional staff, as well as the process of forming the European educational space, inevitably bring with them changes in the structure of the educational system of our country. Since the demands in the field of educational qualifications are increasing almost every day in modern society, there is pressure on the individual to achieve the highest possible level of education in order to acquire a certain (more favorable) social position. However, the condition for that must be equal educational opportunities, which in no case must be only formal, but it is necessary to create a positive climate in which socio-economic factors that can lead to unequal educational outcomes are identified and removed. The aim of this paper was to determine whether the socio-economic status of a student's family has an impact on the quality of their studies and the level of achievement, and if so, to what extent it is represented. On that occasion, the obtained results showed that the socio-economic status of the student's family has a relevant impact on the level of their academic achievements, to a large extent.

Key words: level of achievement, socio-economic status, the family; the students, higher education.

DAYDREAMING IN THE FUNCTION OF SELF-DECEPTION IN ISHIGURO'S NOVEL THE REMAINS OF THE DAY

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ABSTRACT

We live in a world of great expectations and therefore, it is inevitable that the modern man is faced with problems such as fear of change, re-examination and finding excuses. On the other hand, the best way to escape from the reality is to let oneself indulge in another dimension in which everything can be corrected and beautified, and that dimension is daydreaming. All of these are some of the motifs we find in Ishiguro's novel *The Remains of the Day*, but there is one leitmotif that pervades and unifies all the other motifs, and that is (self-)deception. Stevens, as the main character of the novel and the narrator in the first person singular, has his goal, and that is to justify his actions to both the readers and himself, and the goal of this paper is to establish the extent to which he succeeded in doing so. We will perform the analysis from the narratological aspect, within which we will refer to Genette's narrative theory. In addition, we will refer to Barthes's notion of a *narrative contract* that will shed light on the position of the reader in the novel *Remains of the Day*.

Keywords: Kazuo Ishiguro, *The Remains of the Day*, narratology, (self-)deception, daydreaming, justification, unreliable narrator.

UNRELIABLE NARRATOR IN VLADIMIR NABUKOV'S NOVEL ADA OR WHY DOES IVAN VAN VIN TELL HIS STORY?

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ABSTRACT

The purpose of this paper is to analyse the role of unreliable narrator in Vladimir Nabokov's novel *Ada*, as well as motivation igniting the story, worlds and realities that Van creates in his multilayered storytelling. It tries to see beyond what Veen claims his motifs are and discover what great need gives birth to Veen's timeless story. The main focus is placed on the story itself narrated/dreamt/made up by Ivan Van Veen in the work which is "ninety seven percent real and three percent possible" as well as on the path the story undergoes from an ode to a great love to an apology of the very same love and finally to a vindication.

Key words: unreliable narrator, story, multilayered storytelling, motivation, truths, real reality.

THE NATURE AND ORIGIN OF SOCIAL CONFLICTS IN THE MODERN PARADIGM

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ABSTRACT

This paper is the result of an effort to study the most significant conflict theories and identify the most significant areas of conflict potential. There are a large number of conflicting theories in sociology that differ from each other, but all agree on that there are groups in society that have different interests. It is the existence of different interests that represent the conflict potential that raises the probability of conflict to the high level. Hence the certainty that different groups that follow their different interests will lead to conflict, thus creating a certain degree of instability in society. This research will also show the fact that the existence of groups with different interests does not necessarily lead to conflict.

Keywords: conflict, conflicts, conflict theories, war.

A PROCESS-ORIENTED MODEL OF LEARNING MOTIVATION IN A HIGH APPLIED STUDIES L2 CLASSROOM

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ABSTRACT

The question of how to motivate students in ESP teaching is one that does not have a single and simple answer because motivation is an extremely broad and complex construct. This paper relies on Zoltan Dörnyei's definition of motivational strategies and his process-oriented model of learning motivation in the L2 classroom. It presents the results of a survey aimed at obtaining classroom data on motivational strategies: students of the Academy of Applied Studies Šabac who all study English (L2) as an obligatory first-year subject were asked how important they considered a selection of motivational strategies and to what extent they found the application of these strategies successful in creating, generating, maintaining and protecting their motivation for learning L2. Based on their responses, I try to identify the strategies that work best in the described learning/teaching environment and to single out strategies, if any, that tend to be underutilized in the L2 classroom.

Key words: motivation, motivational strategies, L2, classroom, process-oriented model.

RELATIONSHIP BETWEEN FOREIGN LANGUAGE KNOWLEDGE AND EMPLOYMENT IN CELJE COMPANIES

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ABSTRACT

Nowadays, when unemployment has become a big problem in most European countries, including Slovenia, one of the ways to increase employability is certainly knowledge of foreign languages. In my paper, I will briefly present the current situation in Celje's companies, which will be based on surveys and interviews with directors of four companies and data collected at most companies in Celje, primarily those whose owners are completely or partially foreigners. The fact is, that the number of foreign companies in our town, primarily Austrian and German, has been growing. As a result, most business transactions are carried out with Austria and Germany. Due to its geographical position, and also due to historical factors, Slovenia has always been tied to these two countries, and thus to the German language. It is my goal to show that despite high unemployment, the interest in the German language is stagnating or even declining, and how it affects the employability of young people, including our graduates. I will also present some of my innovative teaching methods which influence the raising of the level of knowledge of English and German of our students.

Key words: languages, companies, students, employability, teaching methods.

