



CHALLENGES OF  
CONTEMPORARY  
ECONOMICS



Virtual International Scientific Conference  
„Challenges of Contemporary Economics”

**BOOK OF CCE 2020 ABSTRACTS**

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## PLENARY SESSION ABSTRACTS

Innovative business methods: start-up and spin-off approaches

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**Abstract:** The start-up ecosystem in Slovakia aims to create such an environment that startups form a dominant part of the business environment and the national economy. Startup projects form part of technological and innovative ideas for the development of business activities in Slovakia as well as abroad. The main goal of this article is to define the key factors in the growth of business activities in the form of the Slovak startup environment and to compare it with dynamically developing startup centers in European countries. Another goal is to define the weaknesses of the development of the Slovak startup environment. Through qualitative and quantitative research, we wanted to point out the factors that affect the sustainability of entities in the business in Slovakia. Data were processed based on statistical indicators via ANNOVA and SAS JMP software. Finally, we identified factors that may affect the management of startup projects and processes supporting the strategy of startup project development.

## Deep learning and neural networks applications in Social Media content analysis *Alexandru Căpățină<sup>1</sup>*

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**Abstract:** Deep learning algorithms and neural networks are very powerful analytical tools in extracting, classifying, interpreting and predicting social media content through various architectures. The purpose of this paper is to examine the key themes that emerge in Artificial Intelligence applied to social media research about the role of deep learning algorithms and neural networks in the process of in-depth analyses of social content. **Methodology:** Based on qualitative research design, twenty articles published in top journals or conference proceedings in the period 2018 – 2020, retrieved from Scencedirect.com database have been selected using the keywords “deep learning”, “neural networks” and “social media” were purposely selected. The key themes from these articles were analysed using a Nvivo12 software, which provided a text-mining analysis of the information related to these topics. **The main findings:** The paper provides a visual perspective of relationships and word clouds to better understand social media content analysis with the support of deep learning algorithms and neural networks, highlighting some of the research issues faced by digital marketers and data scientists while dealing with emerging topics in this area. **Conclusion:** The paper highlights challenges and issues faced by researchers in the field of social media, under the strong impact of deep learning algorithms and neural networks, as well as emerging topics in this fast-moving research area. **Recommendations:** There are future research avenues for digital marketers and social media users who are eager to learn from Artificial Intelligence applied in social content success stories. **Limitations:** The survey is limited to a representative sample of research papers on deep learning and neural networks involved in social media content published in the period 2018-2020. A longitudinal analysis would enable the assessment of the trends in deep learning algorithms and neural networks applied to social media content and the identification of how researchers’ ideas in this field evolve over the years.

## 1. CONTEMPORARY ECONOMIC CHALLENGES

Tertiary education graduates and educational fields in the member countries of the European Union

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**Abstract:** The analysis of the distribution of graduates of bachelor's degrees or equivalent, depending on the educational field, in the member countries of the European Union. The distribution of the educational field for the member countries of the European Union with the most numerous graduates is analyzed. Also, for the age group 15-64 years, a comparison is made of the situation regarding the percentage of graduates of tertiary education level (levels 5-8). In the second part, for the member countries of the European Union is presented the evolution of the graduates, the level of tertiary education, the age group 30-34 years. Methodology: We used comparative analysis and we followed the testing of the hypothesis that the dynamics of the number of graduates of higher education have a significant influence on the unemployment rate in the European Union. The main findings: The analysis shows that the first three areas for which the number of graduates in 2017 was the most numerous are: Business, administration, and law; Engineering, production and construction; Health and well-being. The field of Business, administration, and the law was in first place for seven of the eight countries analyzed. Conclusion: In 2019, in two-thirds of the member countries of the European Union, at least one in four persons in the age group 15-64 years is a graduate of the tertiary level of education. The highest values are observed in Ireland, where approximately one in two people in the 15-64 age group is a graduate of the tertiary level of education. In contrast, the lowest values are found in Romania, where approximately one in six people in the 15-64 age group is a graduate of the tertiary level of education. At the European Union level, most graduates came from Germany, Poland, France, and Italy. Recommendations: The prosperity of the societies will depend on the degree to which their members will have the necessary skills to develop and apply new cutting-edge technologies. The acquisition of these skills can be achieved only with the help of education and training programs adapted to the needs of the labour market. Limitations: The article was limited only to the analysis of the educational fields that graduated by the students. This limitation can be overcome by future analyzes of the impact of sustainable development on cultural life, respectively, on the individual behavior of the students during the studies.



## Forbidden, canceled or postponed events due to global pandemic? the future is already here and ready to help

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**Abstract:** Events all around the world, due to the new WorldwidePandemic, were cancelled, delayed or even forbidden. The prohibition of events was the normal measure to be taken by governments all over the world, as gatherings were considered as being one of the main ways of transmitting Coronavirus from human to human. Even internal and international air transportation, as well as auto, ferry and rail transportation, were suspended for several months in many countries affected by this pandemic. But “The Show Must Go On” so event organizers tried to convert to the only place that can go over borders, boundaries and even time zones with almost no restrictions at all. In order to discover the degree of acceptance of the new way of deploying events, we conducted a qualitative study among young adults. On the one hand, the research aims at revealing how migration of sustainable events online is possible without losing the uniqueness and personal experience. On the other hand, we tried to discover the main boundaries that might influence the adoption of online events. Although young adults are considered early adopters, the respondents are still reluctant to what is new and very futuristic. One of the main findings has revealed that people still want to take part physically in events, to feel the vibe and atmosphere, giving them the sensation of being genuine and authentic. The first issue discussed with the sample of young adults was about the Jetlag problems that can occur, especially if the difference in the time zone is more than 5-6 hours. We used three case studies that can be considered road openers for other event organizers worldwide. The first case presented to those interviewed was the “Festival Buddy” or the “party robots”, which gave the opportunity for those who could not attend the event, due to various restrictions, like lack of time or money, to be present and even to interact with the direct audience, or even become “stars of the show”. The second case studied was the concert organized and deployed in a very well-known, especially among teenagers and not only, a game called Fortnite, but they also had more than 10 million online players logged in and enjoying the event. In addition, the last case study presented and discussed was about an event that used the 5G technology network connection in order to project a hologram of a musician on a stage. We recommend that from now on, although the coronavirus pandemic might vanish or disappear, as it appeared or after the discovery of a vaccine, all the events should offer the possibility to those who wish to take part in an event to be also online, as Livestream or giving the indirect audience to be the direct audience as well. The limitations of the study are given to the fact that it is only qualitative research and we propose that quantitative research, as well as longitudinal researches, should be conducted in the near future to see the degree of implementing and deploying online events.

Business Model of Co-Operative Enterprises - Analysis of Various Applications  
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**Abstract:** The article aims to identify elements of the business model of cooperative enterprises, to indicate its specificity related to the use of the humanistic paradigm in management, and to show various ways of implementing this model in Polish cooperatives. **Methodology:** The article is of theoretical and empirical nature. A review of the literature shows the abundance of studies regarding the model of commercial enterprises and the scarcity of publications dealing with the cooperative business model (SMB). However, it allows indicating specific features and elements of SMB. They have been verified in empirical studies showing the implementation of economic and social goals of cooperatives. **The main findings:** The main aspects of SMB appear to be opposed to the business model of commercial enterprises, e.g., maximizing members' benefits versus maximizing profit. Empirical studies have shown that the criterion for assessing results in SMB is a measure of value-added broader than profit by components that are of interest to members and employees. **Conclusion:** The distribution structure of the newly created value in cooperative enterprises is more even (more favorable for members and employees) than in commercial entities. Therefore, cooperatives contribute to sustainable development by reducing income disparities. The structure of value-added precisely shows the division of newly created value in the company. Therefore, cooperatives should report on the added value and thus show the advantages of SMB in the modern economy and society, realizing the importance of sustainable development. The research was conducted in Poland. It covered cooperatives operating in one country. Therefore the results may be affected by a cultural factor.

## The challenges to developing the ‘smart’ agricultural village and the role of MSME in the Industrial Revolution 4.0.

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**Abstract:** Nowadays, rural depopulation is one of the biggest problems both in developed and in developing countries. Development disparities are still happening in Indonesia. The gap occurs between regions and between cities and villages. Differences that arise between cities and villages also happen in terms of information and communication technologies. With the 4.0 Industrial Revolution, inevitably, all sectors, including agriculture, are forced to be able to adapt to and take advantage of the internet-based digital technology. This study uses a literature research approach with secondary data collected through books, research reports, scientific journals, official agency documentation such as the Indonesian Central Statistics Agency. ‘Smart villages’ is one of the Indonesian Government programs to reduce the information flow gap in villages. The concept of the ‘smart village’ is the utilization of MSMEs to use the information and communication technology that is integrated into public services and economic activities. In the application of ‘smart villages’, there are still many obstacles encountered, such as the lack of youth participation and the low quality of human resources in the agricultural sector, limited internet network coverage, and the lack of optimal capital support.

## Method of delimitation of a cross-border functional area with high natural values on the example of Karkonosze National Park

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**Abstract:** Cross-border functional area is a new kind of functional areas. Their delimitation (on the principle of cross-border functional links) and establishment allows elaborating common cross-border development strategies with land use maps. If applicable, they may be a great step in European integration, cohesion policy, and land-use policy. With the increasing awareness of cross-border functional areas and at the same time with lack of regulations for their establishment and their activity, the aim of the study was: a/ to elaborate a set of universal criteria for delimitation a cross-border mountain functional area with high natural values, b/ to delimitate the optimal territory of the cross-border mountain functional area with high natural values based on the Polish and Czech Karkonosze National Parks. The Karkonosze is an extremely valuable cross-border mountain area, and together with the surrounding settlements on the Polish and Czech side, they form a territory with similar features and land-use problems. Research methods were used: studies of the literature, case study, field research, analysis of statistical data, analysis of strategic and planning documents, survey among residents and tourists, structured interviews with both national parks administrations. Due to the fact that the term “cross-border functional area” has not been defined in the Polish literature and legal acts, the author proposed a new definition. So, the cross-border functional area is a cross-border area, consisting of adjacent border areas, separated from each other by a state border, with a relatively distinct, intensive, and open system of cross-border social, economic or natural connections, conditioned by the features of the geographical environment (natural and anthropogenic). It is impossible to elaborate on a set of universal criteria for the delimitation of different kinds of cross-border functional areas. For example, cross-border twin cities (like Zgorzelec-Goerlitz, Cieszyn- Těšín, etc.) will have a different set of criteria for the delimitation of twin cities cross-border functional area and so on. In accordance with the aim of the study, was elaborated a set of 12 criteria for delimitation a cross-border mountain functional area with high natural values. These criteria have been used to delimitate the optimal territory of the Karkonosze Cross-border Functional Area. Cross-border functional areas are currently the highest form of cross-border cooperation compared to European groupings of territorial cooperation (EGTC) and Euroregions. It is the only form of foreign cooperation between local government and territorial units anchored in the spatial planning and development system. This enables the development of TOF spatial development maps - for areas on both sides of the state border as part of the TOF development strategy. It is highly recommended to use the potential of cross-border functional areas to establish or strengthen: functional linkages in border regions, a system of cooperative relationships resulting from a common goal (solving common problems, capitalizing on local potential), and functional relationships. In the case of Karkonosze Cross-border Functional Area both, Polish and Czech neighboring national parks, seem to be the main idea and common platform of local self-government cooperation. It is important not only to delimitate and establish new cross-border functional areas but try to elaborate its cross-border strategies of development with land use maps and sets of investment projects to realize. The main problem of the effectiveness of cross-border functional areas in

solving problems is the same as the problem of spatial planning on the international level. There are numerous legal and administrative obstacles to elaborate common land use maps, even for the small neighboring territories of different countries. At the same time, common land use maps are the main idea of the European Union spatial planning policy.

## 2. DIGITAL TECHNOLOGIES & COMMUNICATION

Economics of charity in the digital era

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**Abstract:** Relatively recently, the world economy has started to witness profound structural changes associated with the process of digitalization of economic and social activities. Digital transformation is likely to modify prevailing mechanisms of economic growth and development and create new ones. Charity is one of the many areas experiencing dynamic changes in the digital era. Despite its importance to economists and policymakers interested in increasing social welfare, the perspectives of charity under technological progress have not been widely discussed by the literature. This paper attempts to fill this gap and to delineate new features of charity due to digitalization, which inter alia lowers transaction costs for both the supply and demand side. For instance, on the supply side, real-time monitoring of the campaign allows donors to behave more like investors and to estimate subjective probabilities of success of particular campaigns based on such factors like the amount of money to be raised, time remaining until the end of the campaign, his individual preferences (e.g., associated with pure or impure altruism), as well as the behavior of other donors. This interdependence of preferences can be associated either with substitutability or complementarity, which under certain conditions, may propel the snow-balling effect. On the demand side, it is much easier to organize and promote a campaign that can reach a greater number of potential donors. Besides, one can observe a tendency towards platformization and monopolization of the charity market as network effects both on the supply and demand side are crucial for better matches. On the one hand, lower transaction costs should translate into greater cost-effectiveness of charity platforms. However, on the other hand, even though charity platforms are not profit-oriented, a greater volume of funds available due to digitalization is likely to increase competition between these organizations. Naturally, some of the costs borne because to this competition may not necessarily be welfare-enhancing. In order to supplement theoretical considerations, the paper offers an empirical example based on a unique dataset on more than 15,000 donations, which were collected to finance an expensive life-saving operation for a 10-year old child from Poland. Donors could decide whether to remain anonymous or to give out their name, gender, and amount donated. They also had a possibility to post a comment (which allows investigating, e.g., the religious context of some donations). The obtained dataset allows us to analyze the distribution of donations for the whole sample and selected subsamples (based on data declared by donors) as well as to test some basic hypotheses. Furthermore, an interesting feature of the dataset is that it also allows for analyzing the effect of sending an e-mail to donors, reminding them about collecting the number and amount of donations in a quasi-experimental framework.

## A new challenge in Digital Economy: Neuromarketing applied in Social Media

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**Abstract:** Being able to test hypotheses rapidly is today's gamechanger in the expected business environment. Moreover, today's digital economy demands insightful, actionable data from consumers into the increasingly accountable managerial hands of marketers in order to speed up the decision-making process. Social media is the de facto indicator measuring consumer engagement and public understanding of products and brands in the expanding digital economy. Even so, up to this point, it is defined as an industry challenge or social enigma of how social media content grows viral and what are the factors to consider when crafting the next giant digital brands. Neuromarketing is an emerging field of study that can tackle this challenge and can help researchers better understand how to communicate in social networks beyond screens and complicated computed code. This methodology provides instruments to analyze the emotional and physiological states of users, assessing quantitative studies on the data collected. This article aims to do a systematic literature review on how neuromarketing can act as a precursor of social media communication for gaining leverage in a more competitive and noisier environment. The scope is to identify actual neuroscience behavioral data intended to be correlated with the cognitive processes of social media users. Based on this understanding, marketing managers can automate complex decision-making functions or validate social media content before publishing. Bridging the gap in these two chapters of consumer behavior results in optimization of the Acceptability and Awareness process in the customer-oriented 4A marketing framework, as described by Sheth (2012) and Kotler (2016). Neuromarketing's capability to understand consumer emotions plays an essential role in the acceptability of the social network user. Furthermore, content on social media can gain more awareness using neuroscience's ability to fine-tune marketing messaging. This study addresses ethical and privacy consumer concerns that, in recent years, became mandatory in the European Union and other emergent economies, as well as limitations of physical interaction in both social media and neuromarketing sciences. The cost of direct interactions is balanced by measurable managerial data, in eCommerce business and quantifiable marketing awareness campaigns. The outcome is a collection of managerial recommendations on social media platforms relying on serendipitous information and quality content in the emerging digital economy.

## Cognitive Time Driven Activity-Based Costing: a Technology to Manage the Key Asset of Digital Economies

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**Abstract:** Human cognitive time has become the key asset of the digital economy yet we lack the means to manage it. As a response to that need, this paper proposes a technology to facilitate the management of cognitive time, called ‘Cognitive Time driven Activity Based Costing’ (CTABC), which is a development of the established time-driven activity-based costing technology. CTABC accounts for human agents’ cognitive time and the fact that cognitive time typically does not equal to the physical clock time in relation to a given economic activity. CTABC also unearths a hidden lever effect that causes significant economic inefficiencies. An illustrative application of the proposed CTABC demonstrates the limitation of contemporary approaches to cost assessments that ignore errors that are caused by workers’ cognitive time estimation. This paper contributes to the literature on cost accounting and specifically to the literature that highlights the problem of time estimates’ accuracy provided by employees.



Communication model in business mentoring networks – theoretical approach  
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**Abstract:** Research background: Different communication models serve not only as a frame for communication, but they can also help to raise business problems as well as discuss them. Those models are mainly designed to develop effective communication between the sender and receiver of the content or message that was transferred. They include factors that affect the communication process called “Noise”, but the model also deals with various concepts like information source, transmitter, noise, channel, message, receiver, information destination, encode and decode. Currently, in the area of the 4th industrial revolution and digitalization of the communication process, there is a need for reorientation of communication models also in the business sphere. Purpose of the article: The aim of the article is a critical review of theoretical communication models, which can be implemented in business mentoring networks. Moreover, the additional objective is the identification of models’ components and relations among them. Methods: Achieving the aim of the article was ensured by the method of critical literature analysis supported by bibliometric research. Content analysis of the selected articles characterizing the communication models has been conducted. Findings & Value added: In literature, there is a loophole of a theoretical framework for the communication model in business mentoring networks. The theoretical model constructed by the authors is a basis toward developing a tool of primary quantitative research conducted among business mentors. The theoretical model allows for creating the list of variables describing the model’s components. The primary research, as the next stage of the research process, will be conducting in the selected CEE countries, which ensures comparative analysis of results.

## The blockchain technology – a Romanian perspective

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**Abstract:** Through this paper, we will analyze both the potential impact that the implementation of a technological system (Blockchain) that can have in the national economy, as well as people's perception of it. This theme is founded on the consideration that the tools used for the continuous development of the economy must be updated in accordance with the requirements and expectations expressed by the majority of taxpayers. In the first part, we will clarify the origin of Blockchain Technology, what it implies, what is the functionality behind it, and what are the elements that compose it. We also present how technology fulfills its role in compiling cryptocurrency. Next, we present the way in which the implementation of the distributed and decentralized system (lack of a central entity with an authoritarian role) can bring benefits both to an increased trust of citizens towards paid services, as well as to a higher degree of fluidization of actions economic nature. We also provide some examples of technologies and areas in which Blockchain can be used for innovative purposes. Next, we analyzed the beginning of the technology implementation using examples of newly created companies of Romanian origin. It also described the positioning of the other states towards both the implementation of the Blockchain and the cryptocurrency. In the last part of the paper, we will present the findings of a survey created to observe and analyse how people understand Blockchain technology, the innovation it brings and cryptocurrencies. Also, this part analyzes the answers received, followed by the interpretation of the results at the end of the survey.

### 3. NEW CRITICAL STRATEGIC CHALLENGES AND ACHIEVEMENTS OF ECONOMICS

Activities of local authorities in creating a pro-innovative environment

***Niki Derlukiewicz<sup>1</sup>, Anna Mempel-Śnieżyk<sup>1</sup>, Małgorzata Godlewska<sup>2</sup>, Tomasz Pilewicz<sup>2</sup>***

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**Abstract:** Local authorities are responsible for the programming and implementation of local development. The significance of local authorities in the process of local development is also discussed in the context of their proximity to the entrepreneurial environment and their awareness of the local potential. On the basis of the diagnosis of literature studies, it was found that the role and place of local authorities in relation to the concept of the entrepreneurial ecosystem is not examined. The aim of the article is to assess the identified activity of local authorities in creating a pro-innovative environment. In order to elaborate on the basic information, the authors conducted desk research and field research. In order to check the state of the art of the investigated issue and prepare the background for the empirical part of the paper, the analysis of the literature on the subject was conducted. The desk research was supported by Emerald, Scopus, EBSCO databases. According to the conducted research, it can be said that the changes in the awareness of local authorities about their role in creating a pro-innovative environment can be observed.

Illicit financial outflows and domestic resource mobilization in Africa:  
implications and opportunities

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**Abstract:** Lower export revenues, uncertain future foreign investment, and aid inflows amidst generally high levels of indebtedness have created a new impetus to examine the capacity of Africa's fiscal policy regime to mobilize domestic resources for the region's development. This has become imperative considering that implementation of Africa's Union Agenda 2063 hinges on Africa's ability to mobilize sufficient, predictable, and timely financial resources. Thus, the rationale for a greater focus on domestic resource mobilization (DRM) highlights a "policy space" that accommodates genuine domestic ownership that is built on sustainable fiscal diversity. Sadly, the last decade witnessed a continued rise in Africa's illicit financial outflows (IFOs), which has the propensity to induce negative growth in the gross domestic product (GDP) of respective countries in Africa. Despite the obvious threat, limited research attention has been directed towards interrogating the nexus between IFOs and DRM in Africa. This study hopes to contribute to filling this apparent gap in the literature using data from Nigeria, Egypt, and South Africa between the periods of 1970 to 2018. The analytical framework of the model was specified on the basis of an individual specific effect model, which is applied to panel data. The individual-specific effect model is based on the presence of unobserved heterogeneity across the individual units in the panel dataset. Findings revealed that illicit financial outflows hurt Africa's ability to mobilize domestic resources for growth and provision of a better quality of life to her citizenry. Public policy recommendations were made with respect to fiscal policies and policies for formalizing the largely informal economy that is prevalent in most African countries. Data on illicit financial outflows for the last four years were not handy, but extrapolation took care of it without any significant effect on the outcome of the research.

## Does the Buffer Stock Model Explain the Household Saving Rate in Poland?

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**Abstract:** The aim of the study: The development of household saving is an issue of great interests to forecasters, policymakers, financial markets, and the business community. This paper contributes to a vast strand of the literature on the effects of uncertainty on households saving by addressing buffer stock saving in Poland. This study aims to measure the relative importance of precautionary, wealth, and credit effects on the Polish household saving rate. Methodology: Following the idea of the reduced-form buffer stock saving model proposed by Carroll et al. (2012) three determinants of the household saving rate are identified: household net financial wealth, credit conditions, and the unemployment risk faced by households. The regressions are run at the macroeconomic level for the data covering period 2003Q4-2019Q3. The main findings: Household net financial wealth, credit conditions for households, and unemployment risk faced by households play a statistically significant role in explaining the household saving rate in Poland. Conclusion: The analysis reveals the importance of precautionary, wealth, and credit effects on the saving behavior of Polish households. Thus, it supports the hypothesis that the buffer stock model explains a substantial part of the variation in the household saving rate.

## Recognizing versus creating opportunities on international markets by firms from Poland

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**Abstract:** The article aims to identify and verify the relationship between internationalization and two ways of treating opportunities in international markets – creation versus recognition of opportunities. **Research Design:** A quantitative research design was employed. A survey was conducted on a sample of 355 firms operating in Poland (CATI). To verify the assumed relationships, statistical instruments were used, including descriptive statistics, Chi-Square test, and multivariate regression. **Findings:** The results prove that opportunities play an important role in international entrepreneurship, mainly when they differ in the various stages of internationalization. In early internationalization, the most important is opportunities recognition, while in the mature internationalization, it seems that opportunities creation is a better choice.

## 4. SUSTAINABLE DEVELOPMENT & STRATEGIC LEADERSHIP

Leveraging social entrepreneurship with the public administration support – the case of Romania

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**Abstract:** This research empirically examines how Romanian public administration supports social entrepreneurship initiatives that address challenges focused on the development of local and regional communities and the connection of the social projects' outcomes. Methodology: Based on a survey among public administration institutions from all Romanian development regions, the authors found that the increased awareness of social problems and the public-funded incentives for social entrepreneurs enable them to develop social projects. The main statistical analyses to test the hypotheses that emerged from the theoretical background were built on Spearman and Pearson correlations. The main findings: The high level of involvement of local public administration in social entrepreneurship initiatives is positively correlated with the importance of social projects for social communities and with a positive perception of citizens on the managers of public institutions. The same independent variable is correlated in a moderate extent with the interest of the citizens to support social causes and projects that bring added value to the community of which they are part and in a small extent with the interest of private companies to co-finance such projects in public-private partnership and the capacity of public institutions to attract non-reimbursable European funds for this purpose. Conclusion: Public managers play a significant role in bridging the gaps related to public-private partnerships in this endeavour, by setting the framework for collaborations between local public administration and social entrepreneurs. The public-private partnerships in the development of effective grant proposals by applying for non-reimbursable EU funds will help emerging social entrepreneurs in their attempt to solve societal challenges in their regions. Limitations: The survey has been conducted on a convenience sample of public managers from all development regions in Romania.

## The impact of social participation on the efficiency of communal investment expenditure

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**Abstract:** The aim of the study: The basic task of communes is to meet the needs of the local community. This task is largely implemented through communal investments in technical and social infrastructure. Local government investments have their own unique characteristics, including high capital intensity, irreversibility of the effects of investment decisions, and a significant impact on local development. Taking into account the features of local government investments and the limited financial resources of communes, it should be stated that the decisions made concerning the implementation of communal projects in the field of social or technical infrastructure should be as rational as possible, to achieve the continuous efficient management of public funds. One factor that may assist in the more efficient spending of investment funds in communes is social participation, which nowadays plays an increasingly important role in local public administration. Social participation allows the local community to influence the decisions made by the public administration, which translates into a greater understanding of the needs of citizens. In the face of this research issue, the main objective of the study is to determine, on the example of the communes of the Małopolska Province, the factors that affect the efficiency of communal investment expenditures, with particular emphasis on social participation. Methodology: In order to achieve the above-mentioned aim, appropriate two-stage empirical studies were designed. In the first stage, the efficiency of communal investment expenditure was determined using the DEA and order-m methods for all studied local government units. In turn, the second stage of the empirical study was based on the econometric analysis. The main findings: The study indicated that the examined efficiency is influenced by the following factors: location of the commune in the Cracow metropolitan area, level of communal investment expenditure per capita, the intensity of use of external sources of financing communal investment, and level of social participation in the commune. Conclusion: The obtained research results have extremely important implications for both local policy-makers and the local community. In particular, local authorities should support and enable citizens to participate in public decision-making through the implementation of various instruments of public participation. At the same time, the willingness to participate in public life should come from the local community itself. Residents should take a keen interest in the activities of their representatives and how they exercise power, as this may significantly increase the efficiency of local government.



## Socially responsible marketing: assessment of the state of implementation

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**Abstract:** The aim of the study is to characterize the state of socially responsible marketing implementation in the enterprise management system and to determine the main directions of interaction with stakeholders to increase the efficiency of the enterprise operation. **Methodology:** The authors have moved a hypothesis that it is advisable to evaluate the state of implementation of socially responsible marketing in the activities of enterprises through the combination of tools for assessing the effectiveness of the implementation of corporate social responsibility and marketing activities. The broad scope of responsibility of these concepts makes it difficult to assess the real state of the implementation of socially responsible marketing in the activities of enterprises. The authors have proposed a methodology for evaluating the state of implementation of socially responsible marketing by enterprises based on a comprehensive approach. The assessment methodology is based on the concepts of sustainable development, corporate social responsibility, socially responsible marketing and 4Ps of Marketing. These concepts have formed the basis for the development of the system for assessing the state of implementation of socially responsible marketing by enterprises. The proposed assessment system involves the use of methods of expert evaluation, statistical and comparative analysis, weighting factors. **The main findings:** Enterprises can really benefit from the initiatives in socially responsible marketing. The results on the compliance of socially responsible marketing with the approaches of CSR development confirm the results obtained earlier, according to which Terra Food Company can be considered a leader by the rate of implementation of socially responsible marketing, while Loostdorf and Almira are considered to be outsiders. The problem is based on the incompliance of the marketing strategy with CSR principles. The enterprises under research implement the conventional marketing concept, while CSP principles are not fully implemented in the companies' activities. **Conclusion:** The research analysis enables to conclude that implementation of socially responsible marketing by enterprises should be carried out on the basis of two approaches combined, in particular, assessment of the state of implementation of corporate social responsibility and determination of the effectiveness of marketing activities based on the concept of Marketing Mix. **Recommendations:** Implementation of CSR in the planning and fulfillment of the strategies allows marketing tools to form the company's reputation and provide preconditions for customer loyalty development. For most modern companies, CSR can become the most appropriate means of implementing marketing efforts in order to increase the effectiveness of interaction with current and potential customers. In addition, the implementation of socially responsible marketing enables to develop long-term relationships and identifies the company as socially responsible, which will help to provide competitive advantages and increase the competitive ability of the company. **Limitations:** The proposed assessment system has been tested at the dairy enterprises so that the peculiarities of production and sale of dairy products have been taken into account when defining the system of indicators.

Behaviour changes in the acquisition of educational toys. Combined analysis of neuroscience and marketing for the sustainable design of all the characteristics of a product. Case study of an educational toy called "Connector" in Spain  
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**Abstract:** This research paper seeks to answer the question of how to improve the efficiency of packaging design in educational toys, through neuromarketing, using knowledge and techniques of neuroscience and qualitative research techniques, in order to achieve appropriate designs (in all aspects that lead to purchasing decisions) to the needs of brands, advertisers and consumers, and to make people make better purchasing decisions, in order to improve the sustainability of the designs and products manufactured. Methodology: In this case, it is a triangulation investigation, so the approach is compound. This is neuromarketing research, combined with qualitative market research techniques: in-depth interviews. The main findings: The most striking feature is the product image. The greatest perception of educational value is related to the brand due to two reasons: the brand name and the childhood experience. Conclusion: The results obtained indicate that there are no great differences between the two packages, and the results are marked by the reading order, being equivalent designs, which does not facilitate the consumer's choice. Recommendations: In general, the designs are similar and convey similar levels. The increased availability of topics and questions leads the consumer to be willing to pay more, plus a higher quality perception. (paperback).

## 5. ECONOMY AND FINANCE, TRENDS ON LABOR MARKET & INNOVATIVE DEVELOPMENT

Women's empowerment and decision-making: Gender gap in the higher education institutions

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**Abstract:** Women possess the potential to be transformative leaders in Higher Education Institutions, but, yet, similar to business, law, and politics, highly visible women leaders in higher education remain the exception. The objective of this work analyzes women's participation in key decision-making positions in Higher Education Institutions. The methodology is documentary analysis related to women empowerment and decision making in the Saint Petersburg State University in Russia, and Universidad de La Frontera in Chile. We analyzed two state universities in two countries that are similar in their GDP per capita and Human Development Index, the Saint Petersburg State University in Russia, and Universidad de La Frontera in Chile. The context of both countries regarding the Global Gender Gap Index is almost similar. The main findings: The current participation of women in key decision-making positions as Rectors, Vice-Rectories and Faculty's Deans differs only at the level of Vice-Rectories. One of the explanations for this difference may be the story of both institutions related to the empowerment of women in managerial positions, especially the position of rector. Conclusion: Gender gap of women's empowerment and decision-making is a reality in the Higher Education Institutions. Despite the context of both countries regarding the Global Gender Gap Index is almost similar, the participation of women in key decision-making positions as Rectors, Vice-Rectories and Faculty's Deans differs only at the level of Vice-Rectories. One explanation for this difference may be the story of both institutions related to the empowerment of women in managerial positions, especially the role of the rector. The state universities should drive recognition of gender equality as one of the binding principles that guide the work underpins the fulfillment of its mission and its functions. The HEI needs to adopt measures and programs to promote the inclusion and participation of women in decision-making at institutional management and incorporate affirmative action measures in order to ensure a minimum percentage of the presence of women among its authorities. More research must be conducted on this topic, and longitudinal studies about the gender gap of women's empowerment and decision-making in the top positions in the Higher Education Institutions should be developed. The study was conducted at only two universities and should be done on a larger sample. And it was also done by circumscribing to state universities; private universities should also be included.

## Driving forces of informal employment. Empirical study based on enterprise data *Dagmara Nikulin<sup>1</sup>*

<sup>1</sup>*Gdansk University of Technology, Poland*

**Abstract:** Reducing the informal employment is a complex matter as several approaches to combating the shadow side of the economy may be applied. Moreover, the phenomenon of informal work is very diverse and covers many aspects as purely informal employment without any registration, informal workers informally operated companies, or false self-employed. In this study, we focus on the registered side of the economy and investigate the phenomenon of informal work in registered entities. The main goal of this study is to provide empirical evidence on the determinants of informal employment in Poland. Methodology: We use a company level data derived from a survey study conducted among a representative sample of Polish entrepreneurs in 2018. In particular, almost 1000 telephone interviews with company owners or high-level managers from the private sector were carried out. In order to measure the impact of a range of potential factors influencing the probability of employ informally, we use logistic regression with robust standard errors. As the phenomenon of the shadow economy and informal employment is sensitive and hard to investigate, we use a dependent variable expressed as a proxy for underreporting of a number of employees. We recode the outcome variable into the binary one, accounts for 1 if the underreporting of a number of employees is observed in a given company. In this way, we measure the determinants, which increase the probability of employing workers in an informal way. The main findings: Our results show a variety of factors that may impact the inclination to using informal workers. In particular, smaller companies and those from the construction sector are more prone to underreport the number of employees. Moreover, we find that the inclination to underreporting depends on the managers'/owners' attitude towards the tax evasion: the higher the tax morality, the lower the probability of using informal workers in a given company. We also claim that the perceived burden of taxes may influence the inclination for underreporting of employees. Conclusion: Our study fills the existing gap in the empirical evidence on informal work and its determinants. Using company-level survey results, we provide a contribution to the possible factors which may increase the probability of employing workers in an informal way. Recommendations: Analysing the baseline results in some policy recommendations may be drawn. Policy measures should adjust the main difficulties related to low tax compliance like the low tax morality and burdensome taxation. Limitations: The core limitations of this study are related to the survey data, which are very hard to obtain due to the sensitivity of the topic. This may result in untruthful answers and some extent of bias. A larger sample of polish enterprises will certainly increase the reliability of the results.

## Regional agricultural centers concept: an analytic hierarchy process approach *Nicoleta Cristache<sup>1</sup>*

<sup>1</sup>*Dunarea de Jos University of Galati, Galati, Romania*

**Abstract:** The aim of the study: The article has as main objective the offering of a solution to the challenges encountered by the Romanian agriculture field, by means of creation of an optimum functioning institution concept in the agricultural field, named “Regional Agricultural Center”. The research involves a series of specific improvement opportunities, analyzed from the main chains of hypermarkets and supermarkets' perspective, as well as by taking into consideration the existing legislation, of having at least 51% of several food product categories from local producers supply chains. Methodology: For accomplishing the objective, the multicriteria decision-making methods (MDCM) were used in order to define a hybrid model of Analytic Hierarchy Process. Following the principles of this methodology, the definition and evaluation of this model were performed with the experts in the field, having as a goal the optimum functioning of such an institution in the domain of agriculture. Another innovative approach was introducing the methods and techniques of continuous improvement - KAIZEN™, as a means for creating a sustainable and performant management system of this institution. The main findings: The results are represented by a prioritization of the main functions that the “Regional Agricultural Centers” should have, for offering value to all the stakeholders involved (farmers, citizens, hypermarkets, local producers, etc.). These findings also provide the prerequisites for developing the necessary flows between them, for maximizing the advantages of benefits of each party involved. Conclusion: Starting from the needs expressed by the main chains of hypermarkets and supermarkets from Romania, the paper followed a logical structure of stages, from identifying the stakeholders' needs related to “Regional Agricultural Centers”, constructing a sustainable decision-making model by AHP methodologies, evaluating it using their expertise and establishing the most important functions that it should have. Moreover, the innovative approach of creating a performant management system using the KAIZEN™ methods and techniques was a very important element, due to their application world-wide in basically all domains of activity. The use of the two methodologies (AHP and KAIZEN™) for optimally defining such an institution in the agricultural field represents a highlight of the article, as an innovative contribution of the authors, in the quest of obtaining value for the stakeholders involved. Recommendations: The approach used by the authors could be extended in various topics and problematics of agriculture at the national and international levels, as well as in many others fields, for achieving performant management systems and a sustainable way of taking decisions, using the support of the involved stakeholders' expertise. Limitations: Although it can be argued if it should be considered one (due to the innovative contribution of the authors), the rather low prior research on this topic, which to include both the AHP and KAIZEN™ methods and techniques in the agricultural field, could be perceived as a limitation of the paper.

## 6. FINANCIAL SECTOR CHALLENGES

Financialization process, financial crisis and economic growth on the example of selected developing countries

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**Abstract:** The research aims to verify a thesis that financialization is a key cause of the financial crisis that limits economic growth, based on the example of selected developing countries. Global financing of the economy is a fact, but the pace and severity of this process vary in different regions. The largest scale of this phenomenon is observed in countries with developed financial markets. However, it also applies to develop countries. The threat associated with this situation consists of an excessive departure from the production to the financial domain and obtaining profit only from financial operations. As a result, it is possible to inflate the speculative bubble on financial markets, but also real estate, precious metals, and even agricultural land markets. The significant scale of seeking benefits in money trading and converting money into another money - with simultaneous generation of profit - can lead to a reduction in economic growth as well as a financial crisis.

The research was carried out for selected developing countries, using data obtained from the Thomson Reuters Datastream database. The research hypothesis was verified: financialization does not lead to a financial crisis and does not limit economic growth in developing countries. Panel analyses were carried out using panel models for quarterly data from 2008-2018. The main variables examined included: GDP growth, bank deposit to GDP, Gross Market Value, derivatives, income, inflation. GDP is the most commonly used macroeconomic indicator for the global assessment of an economy (Soava, Mehedintu, & Sterpu, 2019). Research results show that developing countries are more resistant to adverse phenomena associated with the financialization process. In developing countries, especially in Central and Eastern Europe, the process of financing the economy is smaller (which I call crawling financialization) and has no negative impact on economic growth. In addition to profits generated from financial operations and with stable or developing stock exchanges, there remains an economic space for the production sphere, especially in the area of new technologies development.

**Contributes:** Research allows a better understanding of the financialization process and its relation to the financial crisis and economic growth, especially in developing countries. It is essential to point out not only the negative - as it usually happens - but also the positive factors associated with the process of finalization.

## Households inequality and insurance incidence dynamics: implication for health risk financing in Nigeria

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**Abstract:** Despite the improvements in public health care spending, inequalities in health insurance have continued to spread across different income groups in Nigeria. Studies reveal how medical structure does not actively provide for a dynamic insurance system, especially in cases of emergency or risk among skewed population groups such as the poor, vulnerable and informal sector populations in Nigeria despite improvements in public health care spending. These have led to increases in health risk, and inequalities are driven by health insurance incidence among other shocks across different income groups in Nigeria. This study, therefore, investigates the extent households' inequality and insurance incidence contribute to health risk financing in Nigeria. The study employed World Bank microdata on financial inclusion 2011 and 2014, known as the Global Findex data-set, and adopted a multinomial logit estimation technique for its analysis. The findings revealed how different income groups, insurance incidence, loans for emergency or health purposes, savings, remittances, wages, among others, were significantly associated with health risk financing in Nigeria. Finally, the study concludes that the extent households' inequality is composed alongside insurance incidence has implications on health risk financing in Nigeria. Hence, the study recommends that effective policy interventions be implemented to mitigate increasing health risk, shocks, and the financial burden suffered by different income groups in Nigeria as well as working towards sustaining a consistent fiscal discipline that promotes healthcare equity for all. The study has potential limitations, such as the unavailability of recent data on financial inclusion in Nigeria. To tackle this limitation, the study adopted the 2011 and 2014 financial inclusion world bank survey data known as the Global Findex data-set to address the quality of the findings and research question.

## Multiple bank accounts holder - Conscious or reckless consumer?

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**Abstract:** Service providers are in a fierce competition for their clients' loyalty. They encourage them to participate in loyalty programs or to install mobile applications. Split loyalty is becoming more popular in the banking services market. This means that customers are loyal to two or three companies or service providers. They buy or use their products or services interchangeably. This phenomenon may be further expanded by liberalization in the banking sector, for example, through the PSD2. The unbanked are a commonly analyzed subject in the literature. The other extreme of this phenomenon, the overbanked, has not yet been analyzed in the literature. The article aims to answer the following question: is having accounts in multiple banks connected with recklessness or consumer awareness? The analysis carried out by the author of this paper shows that consumers who have accounts in different banks tend to compare offers in various banks and are aware of the guaranteed amounts of deposits in banks operating in Poland. Other features differentiating the number of bank accounts held are age and income of the respondents.



Working in simultaneous projects: the risks of burn-out  
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**Abstract:** The aim of the study: This paper emphasizes the results of research undertaken on a sample of 120 persons involved in simultaneous projects. The research explores the effects of the high level of workload due to multiple tasks in the same period of time on the risks of the burn-out syndrome. Methodology: A quantitative approach has been adopted in order to test correlations between the demographics criteria of respondents and their perceptions on the risk of burn-out. The main findings: The study found that people who experienced high risks of burnout while working on simultaneous projects are those with families or who don't perceive sufficient family support. Conclusion: People with high risks of burnout while working in simultaneous projects perceive they achieve less than they could, have negative thoughts about their job, are easily irritated by small problems, do not have time for themselves. Recommendations: The severe risks of burn-out can be mitigated through effective time management and effective communication with the project managers. Limitations: Prevention can only follow the acknowledgment of the burn-out risk of persons involved in simultaneous projects. The main limitation is the convenience sample we have selected in this research; the findings cannot be generalized.

## 7. ENTREPRENEURSHIP AS A CATALYST FOR AN ECONOMIC RENAISSANCE

Innovation and Entrepreneurial Orientation in Internationalization Process:  
Evidence from Poland

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**Abstract:** The aim of the article is to identify and verify the relationship between internationalization and innovativeness as well as the innovative behaviour of businesses in the Polish context as one of the large emerging economies. **Research Design:** A quantitative research design was employed. A survey was conducted on a sample of 355 firms operating in Poland (CATI). To verify the assumed relationships, statistical instruments were used, including descriptive statistics, Chi-Square test, the Kruskal-Wallis test and the multivariate regression. **Findings:** The level of innovativeness of investigated firms was relatively high. Results suggest that the innovativeness of a business contributes to the intensification of the internationalization process of firms operating in high-tech industries. The regression model confirms the dependence of internationalization on three innovative behaviours, such as the general evaluation of innovativeness of the firm), the pace of innovation diffusion, and the number of implemented innovations.

## The productivity paradox and performance of companies in the Czech Republic

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**Abstract:** This article aims to analyze the impact of the development of digital technologies on labor productivity in selected industries of the Czech Republic and to evaluate how labor productivity contributes to the performance of companies. The increase of IT technologies in the companies does not necessarily lead to the growth of labor productivity; we are talking about the so-called productivity paradox. Methodology: The starting premise is that the increase of IT technologies in the companies does not necessarily lead to the growth of labor productivity; we are talking about the so-called productivity paradox. This article includes the research of existing literature and the analysis of publicly available data about labor productivity and the use of digital technologies in selected industries in the Czechia (data from the OECD, Eurostat, and the Czech Statistical Office, etc.), including an international comparison. The main findings: In 2019, labor productivity in the Czechia was 83 % of the EU28 average, and productivity converted to hours worked was only 76 % of the EU28 average. The increase in labor productivity is associated primarily with the introduction of new digital technologies. The reason for lower labor productivity in the Czechia compared to the EU average is the low level of practical use of digital technologies and low motivation of employees to use it actively. Conclusion: The results of this study indicate different labor productivity in selected industries in the Czechia. The use of IT technologies increases labor productivity, provided that employees are willing and motivated to use these technologies. An important role has productivity based on the knowledge of employees. The disharmony of labor productivity is also a consequence of the different use of IT technologies in individual industries. Recommendations: The use of digital technologies in a company does not automatically increase the productivity of its employees. The basic prerequisite for increasing employee productivity is the actual use of these technologies, but mere technological equipment is not enough for this; employees also need other working conditions that will allow them to make full use of the potential of these technology. Limitations: The limit of this study is the focus on labor productivity within selected industries in the Czechia.

## Openness, Innovation and Productivity: Evidence from Enterprise Surveys *Anmol Kaur Grewal<sup>1</sup>*

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**Abstract:** This paper aims to investigate the firm-level dynamics of openness and productivity in developing and emerging economies. Using an augmented version of the structural framework initially proposed by Crépon, Duguet, and Mairesse (1998) (CDM hereafter), this paper focuses on innovation as the underlying mechanism through which openness affects productivity. Despite the multitude of studies on the link between innovation and productivity, there are still a few important gaps in the literature. First, most of the related literature is based on aggregated country-level or sector-level analyses. Among the studies that do use firm-level data, nearly all of them use cross-section data, which does not allow one to capture unobserved firm-level heterogeneity (that also goes unaccounted for in the case of more aggregate analyses). Second, the majority of this literature focuses on advanced economies, and firm-level evidence on developing countries is still relatively limited. This is in part due to the scarcity of comparable firm-level survey data for developing countries. This paper aims to fill these two gaps in the literature by using the World Bank Enterprise Surveys to construct a cross-country panel dataset spanning 54 emerging markets and developing economies between the years 2002-2019. To the best of my knowledge, the dataset so constructed is the most comprehensive in terms of its geographical coverage for a study of this type. Additionally, this paper contributes to the limited body of empirical work that focuses on innovation as the channel through which firms' openness affects their productivity. This analysis uses four different measures of openness: share of exports, imports of foreign inputs, inward FDI and use of foreign-licensed technology. The underlying mechanism through which openness affects productivity is measured in terms of two types of innovation: product innovation and process innovation. Using the structural framework proposed by CDM (1998), this paper aims to pin down causality and address the concerns about endogeneity and selection bias that may arise from the possibility that a firm's extent of openness, its decision to invest in innovation, and its performance may be simultaneously determined. This paper is relevant for innovation policy at the country level since it aims to advance the understanding of how developing and emerging economies can maximize their gains from openness.

## Comparison institutional pathologies of innovation networks in Poland and Hungary

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**Abstract:** Innovations, in the era of globalization, are considered in the literature on the subject to be a crucial growth factor for every national economy (Drucker 1992; Gomolka 1998; Marciniak 2000; Tidd 2006; Lee, Olson & Trimi 2012; Romanowska 2014). Institutional pathologies connected with innovation networks may be connected with: i) institutional context like lack of trust, opportunism, legal contracting, self-interest (Cooke & Wills 1999; Keeble et al. 1998, 1999); ii) formal institutions (Saxenian 1990); iii) network failure (Bower et al. 1997 or Rychen & Zimmermann 2002); iv) government failure like an inadequate national system of innovations or regional system of innovation (Bower et al. 1997; Sternberg & Arndt 2001); v) informal institutions like corruption arising from network management (Frisman & Golden 2017) or clientelist (rent-seeking behaviours) (North, Wallis & Weingast 2009); weak delegation (principal-agent theory) (Kiewiet & McCubbins 1991) or values, norms, habits and basic mechanisms generated under the previous totalitarian system may still predominate (Kwasniewski 2013); vii) political conditions, rules (Tidd 2006); vi) weak intellectual property rights institutions (Demsetz 1967; North 1981; Coase 1990); vii) weak justice system (The World Bank 2002) or viii) incomplete contracts (Shavell 1999). The main aim of study will be to identify institutional pathologies of Polish and Hungarian innovation networks and develop a catalog of actions that could be implemented (at the national or regional level) to eliminate these pathologies. The methodology of the study will cover 6 following stages: 1. Metanalysis of literature 2. The quantitative study: an electronic survey of potential participants of innovation networks in Poland n = 2909; 3. The quantitative study: an electronic survey of potential participants of innovation networks in Hungary n = 3384 ; 4. The qualitative study: case study of n = 25 innovation networks; 5. The qualitative study: an in-depth interview with orchestrators of n = 25 innovation networks; 6. The Delphi method compares the quality of the institutional environment in Poland and Hungary (at national and regional levels). The main findings: The occurrence of institutional pathologies of innovation networks depends on: i) the scope of activity; ii) variety of composition; iii) number of participants of the innovation network; iv) power of the interplay between formal and informal institutions; v) implementation of corporate governance code; vi) informal institutions like business codes; vii) participation of competitors inside the network; viii) networks financing rules; ix) cooperation between networks and science; x) type of innovation networks; xi) culture and common norms; xii) orchestrator; xiii) formal or informal relationship between participants of networks; xiv) regional innovation systems; xv) national innovation system. Conclusion: The greater the number of: i) network activity; ii) network variety of composition; iii) network participants; iv) competitors inside the network; v) network nodes; vi) informal norms; vii) orchestrators; viii) institutions – organizations like local government unites or universities inside networks, ix) formal institutions like regulations connected with innovation networks, the higher the level of institutional pathologies of innovation networks. Recommendations: It is important to strengthen formal and informal institutional arrangements of national and regional innovation systems.

## Collaborative spaces: when designers meet business professionals

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**Abstract:** The aim of the study: The paper aims at studying the perceptions and expectations held by business professionals (managers and marketers) and designers of their role in business structures and processes and the role of the other professional subculture. Both groups of professionals develop different sets of skills and competencies, which makes them follow certain behavioral patterns and feel more comfortable in different settings. They also share assumptions about each other, influencing the quality of their collaboration and the subsequent outcomes. Methodology: The authors chose a mixed-method approach. An extensive literature review was paired with a quantitative survey. The survey, conducted among design and business students who had the opportunity to collaborate, tested their predispositions and perceptions. The main findings: Despite differences, there is a common understanding of organizational goals and willingness to make a joint effort to achieve them. Leveraging on the other professional's expertise and building trust conditioned finishing the marketing projects and bringing tangible end results. The evident differences seem to complement one another, thus creating ground for effective collaboration. Conclusions: The role of design is expanding, but its function in organizational structure stays elusive and unclear. Designers and managers do know their responsibilities, but how to frame their overlapping competencies productively and effectively may be challenging. The research conducted among design and business students was to verify their perceptions and expectations of their role in business structures and processes and the role of the other professional subculture. While it seems that the potential for fruitful collaboration is huge thanks to positive evaluations and congruent observations, much has to be done in order to facilitate a promising workplace in terms of recognizing design within other managerial functions and forging stronger bonds between the two professional subcultures based on their interdependence. Limitations: The limitation of the study is its scope. The authors feel the need to support it in the future with more qualitative research and approach not only students but also professionals to see how the perceptions and expectations are changing or evolving with more experience.

## 8. INNOVATIONS IN FINANCE — FINTECH SECTOR

### Portfolio optimization with cryptocurrencies – a multicriteria approach

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**Abstract:** Changes in the economic environment always affect the investors' expected returns so that, in view of the changes in the environment, they adapt the composition of their portfolios in order to maximize the targeted return and risk ratio. In situations of long-lasting periods of low-interest rates, as recorded in the last decade in the world, traditional investments become less attractive and investors turn to alternative forms of investment in pursuit of higher returns and diversification of the portfolio. In that sense, cryptocurrencies as an alternative form of investment are in the focus of the interest of many investors. The basic requirement that each new - alternative form of investment should meet is the contribution to Markowitz diversification - contribution to a more favorable relationship between return and risk in the portfolio. Recently, some number of papers have been published on this topic, mainly considering the contribution of particular cryptocurrencies to portfolios with the rest of the assets being traditional ones. All of them confirm that cryptocurrencies contribute to the better return/risk ratio of portfolios. However, it is to be expected that not all available cryptocurrencies are equally favorable for investment due to their specificities in a number of features. Variations in volatility and return but also in other indicators like liquidity, mining difficulty, attractiveness should be included in the appropriate, comprehensive manner in models for optimization of a portfolio that include cryptocurrencies. The traditional portfolio optimization approach based on Markowitz mean-variance model is not appropriate for cryptocurrency portfolio selection. Namely, standard model assumptions like normal return distribution or a quadratic utility function are not met for this class of investment assets. For that reason, it is more appropriate in the portfolio selection process to take into consideration alternative risk measures, which consider the so-called higher moments of the distribution, e.g., omega ratio or entropy. Moreover, for this class of risky assets, it is useful to include in the portfolio selection model different risk measures. Modern portfolio theory provides support in the form of numerous studies and resulting findings on including appropriate alternative risk measures in models. Methods of mathematical programming and multi-criteria decision-making make it possible to incorporate all recognized specificities and constraints into the model, in order to find out which constituents with the appropriate weights should be chosen for the cryptocurrencies portfolio with the best performance. Taking into consideration the properties of this class of assets and the nature of the selected criteria, this problem of multi-criteria programming for the selection of cryptocurrency portfolios should be solved by using the appropriate techniques. In this paper, the authors propose a modified and adjusted multi-criteria programming model based on the PROMETHEE II approach. The proposed model will be demonstrated and tested using a sample of cryptocurrencies for which all required data are available in the period from 2015 to 2020.

Do stock investors value innovation? Evidence from an emerging economy  
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**Abstract:** The following article investigates abnormal stock returns related to patent announcements on a developing stock market, namely, the Warsaw Stock Exchange, from January 2004 to March 2018. We utilize the standard event study methodology on a unique sample of all invention patents granted by the Polish Patenting Office to the currently listed companies and find that patent announcements represent important information for the investors. However, abnormal returns are statistically significant when a patent is granted than when a patent application is filled out. Moreover, the study suggests that the market response depends on the industry in which a company operates. The results allow us to draw several managerial implications and to suggest directions for further studies



The deterministic model of corporate cash flow  
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**Abstract:** The purpose of the article is to create a cash flow model for capital groups. Cash flow in capital groups is shaped by many measurable and immeasurable factors, external and internal. The article is an attempt to derive and verify a cash flow model that would answer the question of what factors determine flows in capital groups. The model analysis will use methods of economic analysis, including indicator analysis and deterministic methods, and methods of descriptive statistics.

## Dividend changes in Europe: theory and practice

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**Abstract:** The paper aims to examine the factors influencing the dividend payout policy and its changes. The analyses also cover the theory approach versus practice in case of tendencies on emerging and developed economies. Several different internal and external firms' characteristics have been discussed in the literature (DeAngelo, DeAngelo, & Skinner 2004; Floyd & Skinner 2015; Jabbouri 2016; He, Ng, Zaiats & Zhang, 2017; Gupta, Ye, Sako 2014). The study uses a firm-level panel data set comprising all publicly traded firms. The analysis is based on unbalanced panel data of companies from 35 countries throughout 20-years, 1999-2018. The study covers the companies that are listed on the European stock exchange and also includes countries that are not in the UE. The multi-country approach is essential in assessing the equality of decision-making positions (Saona, Muro, San Martín & Baier-Fuentes 2019). Positive relation of dividend payout was noticed for previous dividend payout decisions, company size, productivity, and profitability. The payment of dividends during 20 years was still a useful tool used by large and profitable companies. Companies that decided to pay dividends try to stay in a group of dividend payers. The findings from this study could be useful for the board of directors and managers from different sectors. Limitations of the study results are mainly the consequence of the limited number of sample observations and the irregularity of decisions on dividend payments.

## 9. GLOBAL ECONOMY ISSUES

### Exploring the Critical Success Factors of ICT Project Implementation in the Health Sector: Implications for the UK National Health Service (NHS)

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**Abstract:** Despite many previous studies on critical success factors (CSFs) on projects, the rate at which Information and Communication Technologies (ICT) projects still fail is very alarming and most especially with respect to their implementations in the health sector. Many authors have alluded the reasons for these to the complexity and difficulties of the factors inherent in implementing even smaller-scale systems in this sector. Therefore, this research investigates the critical factors that are responsible for the successful implementation of ICT projects in the health sector using the UK National Health Service (NHS) as a case study. Empirical data were collected through mixed-method research techniques, which included semi-structured interviews and survey questionnaires. The collected data were analysed using SPSS descriptive, inferential and analytical statistics. The CSFs were identified and then ranked in order of importance. Furthermore, the barriers to successful ICT project implementation in the healthcare sector were identified and examined. Based on the research findings, solutions were also proffered to these barriers. Finally, an integrated conceptual model was developed to provide a holistic framework for the successful implementation of ICT projects in the health sector. The aim of the study: The aim of this research is to investigate those critical factors that are responsible for the successful implementation of ICT projects in the healthcare sector using the NHS as a case study and to develop a holistic framework that could assist project managers in the successful implementation of ICT projects in the health sector. Methodology: This study adopts mixed-method research design (Oderanti and Li, 2018, Walsh et al., 2012). Both quantitative and qualitative data analysis techniques were employed in analysing the raw primary data collected using inferential and descriptive statistics. The main findings and conclusion The 12 CSFs identified and discussed in this research are project team and the manager's experience and competency, adequate funding and resources, client involvement, project understanding, risk management, teamwork, effective communication, top management support, realistic expectations, effective project management and talent. These CSFs were ranked by the 58 staff that participated in the survey and the 5 top ranked ones are effective communication, adequate funding and resources, effective project management, client involvement and a competent project team and manager. The management staff interviewed also agree that these factors are the topmost factors responsible for the successful implementation of ICT projects at the UK General hospital surveyed. The ranking of these factors confirmed that some CSFs are more critical than the others. The barriers to ICT project success in the health sector were also identified using both the qualitative and quantitative methods. Furthermore, the participants in both the survey and the interview were requested to suggest solutions to these identified challenges and the solutions proffered by the

staff under both techniques were coherent with each other; these include the provision of adequate resources and avoidance of scope creep. The six hypotheses formulated at the beginning of the research were tested and validated using different techniques such as the Spearman rho correlation coefficient and Kendall's Tau technique.

**New Scramble for Africa's Oil: Implication for Labour and Employment**  
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 Geraldine Ejiaka Nzeribe<sup>1</sup>, Chekwube Vitus Madichie<sup>1</sup>***

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**Abstract:** The new scramble for Africa is characterized by the inflow of direct investment for the exploitation and extraction of African natural resources, and no doubt, this had stimulated the growth of Africa's commodities (oil and minerals) and promoted higher average income in some African countries. Unfortunately, Africa's labour had been largely excluded as much of the investments in oil and minerals are heavily capital-intensive and tend to displace labour in local production, as well as undermine the prospects of labour employment in the continent. Labour unemployment in Africa remains pervasive and multifaceted as 10-12 million youths, join the labour market every year, while only 3.1 million formal jobs are available per annum. Arguably, this is contributing to the increasing migration of young people from the continent to industrialized countries in search of greener pastures in order to lead their families at home out of poverty. A number of studies have explored the impact of foreign direct investment (FDI) on employment generation at both country-specific and cross-country magnitude levels, with a certain degree of aggregation of FDI. However, there seems to be limited literature on FDI-employment relations in Africa and more importantly, the link between oil sector FDI and Africa's labour employment is yet to receive the desired attention. Thus, this study examined the impact of oil sector FDI on labour employment in selected oil-rich African countries over the period 1995 – 2018. Based on the dynamic panel modeling technique, the study employed the Instrumental Variable (IV) regression within the framework of the system Generalized Method of Moment (GMM) estimator. The results show that foreign investments in oil sector have a positive but not a significant effect on labour employment in Africa. This goes to suggest that FDI in oil sector have not significantly generated gainful employment opportunities in the selected oil-rich African countries during the review period. Based on these findings, the study concludes that the new scramble for Africa in the form of foreign investments in the oil sector does not generate employment opportunities in the region. The study recommends among other things, that the governments of African countries should work together to establish a programme initiative aimed at diverting foreign investments into labour-intensive sectors. One of the major limitations of this study was data availability and scaling from different sources, especially those related to official development assistance and oil sector FDI of the selected African countries. Hence, the data were standardized to surmount these limitations and data on direct employment was used due to the unavailability of data on indirect employment.

## Poverty-Growth-Inequality triangle: evidence from Nigeria

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**Abstract:** The concept of the poverty-growth-inequality (PGI) triangle is fraught with controversy. There is a growing intellectual debate on whether the main focus of development should be placed on growth or poverty and/or inequality. The rapid elimination of absolute poverty, under all forms, is a meaningful goal for development, and to achieve the goal of rapidly reducing absolute poverty requires strong, country-specific combinations of growth and distribution policies. In other words, the real issue in establishing a development strategy is whether growth and distribution are independent of each other or strongly interrelated. Indeed, a low level of poverty has been recognized as the chief indicator of economic development. This explains why responsible governments worldwide vigorously strive for poverty eradication as a major development goal. Unfortunately, despite several decades of development efforts in the face of abundant natural and human resource endowment of Nigeria, poverty remains pervasive, multifaceted, and chronic, while the gap between the rich and the poor (indicated by income inequalities) continues to widen and have remained the major challenges to development efforts. Thus, the study examined the nature of the interaction between income growth and income distribution, as well as unveiled how this interaction affects poverty in Nigeria over the period 1981 – 2018. The study employed the Toda-Yamamoto (TY) causality approach in carrying out its objective. The results showed evidence of bidirectional causality between income growth (economic growth) and income distribution, and a unidirectional causality running from income distribution to poverty, but no evidence of causality was found between income growth and poverty during the review period. This implies that the triangular relations among poverty, income growth, and income distribution is such that income growth (economic growth) alone does not influence the poverty level. Still, its distribution pattern (income distribution) does. The study recommends, among other things, that if the focus of development rests on poverty reduction, then growth policies should be adequately complemented by strong distribution policies that could bridge the wide gap between the rich and the poor in Nigeria. One of the major limitations of this study was data availability from one source, especially for the period covered in this study. Hence, the different data collected were standardized into a uniform unit/form.

An empirical analysis of the effect of corruption on savings in Nigeria  
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**Abstract:** Nigeria has failed to mobilize adequate savings required to attain high levels of economic development, and the country has consistently ranked among the most corrupt nations in the world. This study investigates the effect of corruption on domestic savings in Nigeria over the 1984-2016 period using the ARDL-bounds testing approach. The result of the bounds test to cointegration demonstrates a long-run relationship between savings and corruption (along with income level, inflation rate, real interest rate, age dependency rate, and unemployment rate). The estimation results indicate that reducing corruption is associated with higher savings. Other important determinants of savings in Nigeria are income level, inflation rate, real interest rate, age dependency rate, and unemployment rate. Based on these empirical outcomes, this study recommends policies to reduce corruption to encourage savings in Nigeria. These policies should be complemented with measures to raise income level and real interest rate, including reducing the inflation rate, age dependency rate, and unemployment rate to promote savings in Nigeria.

## Performance prediction in the manufacturing sector: the effect of ownership and technological intensity

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**Abstract:** The aim of the study: Our study addresses the relevance of a reduced set of continuous and categorical variables that describe business characteristics for differences in performance between foreign versus locally-owned companies in industries with dissimilar levels of technological intensity. Methodology: We use a machine-learning-based Random forests algorithm for classifying economic activity within the European Union (EU), applied to 440 business units from 20 EU member countries, and 11 manufacturing industries classified as high-tech to low-tech industries by the EU. The timeframe of our analysis is 2009-2016. Data is collected from Eurostat. The main findings: We find a diverse landscape of business performance within the EU that does not indicate necessarily a clear-cut dominance of foreign-owned companies against their locally-owned peers, but suggests heightened performance for industries with a higher technological level compared to industries with a lower technological level. The Random Forests model performs surprisingly well given the low number of predictors considered and indicates that personnel costs per employee are the most important variable that discriminates between foreign and locally-owned companies. Value-added and gross investment shares in turnover are significant discriminatory variables between higher and lower technologically intensive industries. The algorithm provides low misclassification rates for low-tech industries, but higher for medium high-tech and medium low-tech industries, suggesting that business units operating in EU countries in specific industries do not necessarily share the a priori characteristics according to the industry technological level. Conclusion: The differences in business performance in the manufacturing sector are significant, both in terms of ownership (foreign versus local) and technological intensity. A reduced set of variables is able to accurately predict business units' classification in the predefined classes – among the most important are personnel costs per employee, and value-added and gross investments share in turnover. Our results indicate that foreign-owned companies seek to attract the best talent for use across their global operations, irrespective of where the subsidiary is located, but also that there still is a “foreignness liability” within the European Union, despite decades-long economic integration. Moreover, this behavior alters individual business attributes compared to their a priori inclusion in an industry with a specific technological level. Recommendations: Our results offer a better understanding of the characteristics of business performance so that improved and custom policies aiming at enterprise support may be designed. Limitations: The most important limits of our research are data availability since information on all EU industries, sectors and countries was not available. Second, the data recorded in our dataset for each type of ownership refers only to the businesses in whose case there is a minimum of 50% foreign ownership, respectively. This means that companies that have a lower participation rate of foreign capital are included under locally-owned companies, while they might receive a significant influence from foreign capital. Third, the classification of businesses from high-tech to low-tech might not take correctly into account individual companies' attributes built on specific sources of competitive advantages that are difficult to grasp at the industry level.



## 10. FINANCIAL AND UP-TO-DATE ECONOMY DISCUSSIONS

Measuring the impact of financial cycles on main macroeconomic variables in Poland

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**Abstract:** The aim of the study: Financial development through credit and financial cycles will have a positive impact on economic growth and, in turn, on business cycles. The real mechanism behind the model and channels through which financial markets affect business cycles remains unanswered. The importance of credit and financial cycles was first put forward by Minsky (1957) in the context of the hypothesis of financial instability. The financial instability hypothesis is based on the asymmetrical information assumption of the financial markets leading to future asymmetric shocks and, thus a financial crisis. In this study, we use Beveridge-Nelson multivariate decomposition to estimate the impact of financial cycles on the main macroeconomic indicators in Poland. Empirical results in the paper shows financial cycles have a large impact on macroeconomic conditions in Poland, influencing long-term growth. To achieve long-term and sustainable economic growth, policymakers should monitor financial cycles and revise fiscal and monetary policy accordingly.

## Model of late economic socialization: study on retirees of the industrial region of Russia

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**Abstract:** Many countries all over the world, including Russia, have encountered the problem of population aging and its economic consequences, but the ways to overcome it are not quite obvious. Science does not have sufficient knowledge about the mechanisms of economic socialization when people retire. The aim of the study is to develop a theoretical model of late economic socialization and to verify it through the Russian regional sample (N=210). Late economic socialization is the process and result of a person's re-interpretation of the values of economic culture, accompanied by changes in individual components of economic mind and behavior as a result of retirement and acquisition of a new social status. Based on analyzed literature, we develop the theoretical model that includes the structure of the economic mind and behavior of the retirees. Predictors of late economic socialization in the model are demographic, biological, social and psychological variables. The effects of late economic socialization are the level of subjective well-being and the level of subjective economic well-being. Methodology: To verify the theoretical model, the following methods were used: a questionnaire to identify the social and demographic indicators, Schwartz Portrait Values Questionnaire (2012), the questionnaire for the express diagnostics of economic attitudes (Deyneka, Zabelina, 2018), the economic activity questionnaire (Zabelina, Chestyunina, 2020), the scale of life satisfaction (Diner, Emmons, Larsen, Griffin, 1985), the modified scale of A. Fenham's subjective income (Deyneka, 1999).

Results of SEM showed good fit of developed model ( $p = 0.011$ ; GFI = 0.945; CFI = 0.910; RMSEA = 0.048;  $P_{close} = 0.532$ ). Four strategies for late economic socialization were identified: 1) strategy of economic activity based on striving for financial status; 2) strategy of confidence in the future thanks to savings made from financial knowledge; 3) strategy of an employee (willingness to work for big money at the expense of health and vocation, accompanied by financial illiteracy); 4) restrictive strategy (avoiding debts and financial optimism). Conclusion: Despite the fact that all strategies are supported by demographic, biological, social, and psychological factors, only one of the – savings strategies based on financial knowledge – has shown a significant contribution to subjective well-being and subjective economic well-being. Recommendations Based on the obtained data, recommendations can be made to both private households and government entities responsible for supporting people of retirement age. The key to successful economic socialization in the later years is the ability to save money and manage savings based on knowledge of financial laws. It is necessary to improve the financial literacy of the population long before they retire. Limitations: The limitation of the study is a small sample from an industrial city in one country. In the following studies, it is expected that this model will be tested on samples of other regions of Russia, including central ones (Moscow), as well as on samples of retirees from other countries (Japan, Norway, Ecuador).

On the role of institutional factors in shaping working capital management policies. Empirical evidence from European listed firms  
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**Abstract:** The aim of the study: In this paper, we investigate the impact of institutional quality on working capital management on a sample of 5.431 listed firms across 28 European Union countries over the period 2010-2018. As highlighted by the literature review, this stream of research is still in infancy. Methodology: Three-panel data methodologies are used to estimate the relationship between institutional quality and the working capital ratio. The first method is the ordinary least-squares regression model (OLS) used to obtain heteroscedasticity-robust estimators. The second method employed is a panel-corrected standard error (PCSE), a method robust to firm-level heteroscedasticity and contemporaneous cross-panel correlations. Since the independent variables can be correlated with the error term, we account for endogeneity concerns and, therefore, we employ SYS-GMM, as the third estimation method. We use different relevant indicators better to capture a full picture of the institutional background, as follows: property rights, government integrity, tax burden, business freedom, monetary freedom, trade freedom, investment freedom, and, respectively, financial freedom. We also employ several control variables that we draw from the corporate finance literature on working capital determinants. The main findings: The results indicate that firms located in countries with a stronger institutional framework maintain lower levels of working capital on average. The results prove to be robust for different estimation approaches and different sub-samples of firms. Conclusion: We find robust evidence that institutional quality plays an important role in shaping the working capital policies of the European listed firms. The statistical significance of the estimated coefficients indicates that all institutional quality variables are important predictors of working capital, except monetary freedom and trade freedom. The findings indicate that firms active in countries with solid institutional framework hold lower levels of working capital. We provide evidence that European listed firms favor less liquid financial policy with regards to working capital, in the context of better institutional quality. Recommendations: The firms should consider the quality of institutions when maintaining optimal working capital. While it is not possible to change the institutional environment, for managers, it is desirable to take into account the influence of corruption on short-term financing decisions. Moreover, the managers of the multinational firms should take into account the influences of different level of corruption when maintaining optimal working capital in foreign countries. For policymakers, the most important finding is the statistically significant influence of institutional quality variables on working management, as this is the first study that analyzes the influence on working capital of eight different dimensions of institutional quality, as well as an overall index. Moreover, the results are useful for policymakers to have a complete overview of the linkages between institutional environment and firm-level effects to understand the context-driven between institutions and financing alternatives. Limitations: We call for more research on the role of institutional factors and their consequences, by taking into account more variables related to corporate governance and expanding the sample of countries.

## Key effects of mentoring process- comparison of the career path of mentored employees with non-mentored employees

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**Abstract:** The aim of the study: A significant number of research projects re-confirms that mentoring is one of the key tools for developing human capital. The aim of the study is to examine the mentoring process in companies in terms of the benefits obtained by its employees. The following research questions were asked: what kind of effects of mentoring in the field of personal and professional development are obtained by mentored employees; does the participation in the mentoring process increase in the mentored employees' the probability of achieving raises in their salaries, and more efficient promotion in the organizational hierarchy compared to those employees who have never experienced mentoring. Methodology: Our pilot study was conducted within the period 10.2018-10.2019 in two large, mentoring-mature companies (i.e., with the structured mentoring process in the organization) based in Poland. The purpose of the analysis was to determine the degree of dependence between the employee's participation in mentoring and their professional development, career success and personal development. One hundred ninety-six employees participating in mentoring processes and 196 employees non-participating in mentoring were recruited for this study (both collections of employees are characterized by the same structure in terms of employee seniority and position held) from mentoring-mature companies. The following data collection techniques were used: internal desk research (data from HR departments concerning 392 employees); computer-assisted questionnaire interviews (28); direct, in-depth interviews with mentors, mentored employees, superiors of the mentored employees, and representatives of the management (35). Such data analysis techniques were used in the process: desk research, correlation analysis, path analysis, as well as network analysis (by using graphs). The main findings: In general, the research exhibits levels of personal and professional satisfaction of those employees who participated in the mentoring processes. The important part is, however, the in-depth analysis of precisely defined effects of those processes, explaining the relative value of the gains achieved by the participants and mutual correlations and interdependencies between the effects. Our analysis indicates concrete factors of the success of the mentoring processes. Moreover, we present the result of the comparison of the career paths of those employees who benefited from mentoring processes and those who did not as well as relations between various levels of remuneration and participation in the mentoring process. Conclusion: It was stated that the difference in the level of promotion between people who participated in the mentoring program and people who did not take part in mentoring was statistically significant; therefore, the people that complete mentoring were more likely to be promoted. While comparing the average earnings for two groups of employees, it was determined that the number of earnings was higher in the group of people who participated in the mentoring program. Limitations: It was a pilot study conducted in two organizations. In our study, we decided to implement a diverse array of research tools parallelly in order to describe the phenomena under scrutiny in multiple, independent ways, increasing the accuracy of the conclusions drawn.

CSR dysfunctions. Towards the identification of socially irresponsible behavior-  
the perspective of a small enterprise  
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**Abstract:** The purpose of this epistemological and empirical article is to present selected theoretical and practical dysfunctions of the CSR concept in relation to the specifics of managing a small enterprise and to present the issues of identifying the socially irresponsible behaviors of this group of enterprises. Based on the subject critical literature review and the results of own empirical research, it presents selected key dysfunctions of the CSR concept in the theoretical, methodological, empirical and practical dimensions, with particular emphasis on identifying socially irresponsible behaviors of small Polish enterprises. The research results are the result of the author's long-term and multi-stage literature and empirical research on the identification, assessment and directions of improving social responsibility of a small enterprise, with particular emphasis on social responsibility management as well as the conditions and results of realizing the social responsibility concept, and currently the conditions and manifestations of social irresponsibility of this group of enterprises. The research process has been ongoing since 2008 and consists of several consecutive projects: 1. realised in 2010-2012 entitled: Social responsibility management. Identification-assessment-directions for improvement, financed by the Ministry of Science and Higher Education, consisted of preliminary research (2008-2009) and three stages of proper research, during which 187 small Polish enterprises from 12 voivodships and 133 small enterprises from Ireland, Great Britain, Germany, the Czech Republic, Norway, Spain, Italy were researched using survey questionnaires, interviews, observations, analysis of organizational documentation, comparative analysis based on a case study. A total of 320 enterprises were surveyed. The research sample was characterized by quite a large diversity due to employment figure, industry, age, etc.; 2. after more than four years (2015-2017) from the end of the proper research of the first project, the state of realization of the social responsibility concept was re-examined with the intention of assessing the conditions and results of the realisation of the social responsibility concept. Modified research tools (survey questionnaires for the owner, employees, customers and an interview questionnaire for the owner) were used. Extensive and in-depth empirical research was conducted on a purposefully selected sample of 48 small Polish enterprises from 12 voivodships. The purposeful selection of the enterprises was directly related to the results of the empirical research from the second stage of the 2011 research (1st project), during which the enterprises aspiring to the status of socially responsible were selected, because they distinguished features that exposed the socially responsible nature of their activities; 3. on the basis of the research result evaluation of the 1st and 2nd project, the main limitations in the realisation of the assumptions of the social responsibility concept were identified and research work was undertaken to identify the conditions and manifestations of social irresponsibility of a small enterprise (from the perspective of - other groups of enterprises). The research process is ongoing. The article also contains a proposal of selected actions for entrepreneurs in terms of perceiving dysfunctions in implementing the assumptions of the CSR concept and limiting and / or not undertaking socially irresponsible activity in a small enterprise. The main research limitations include multidimensionality and

interdisciplinarity of research issues, usually the declarative nature of respondents' responses, limited representativeness in the research of external stakeholders, a limited selection of research methods, problems with the institutionalization of identifying socially irresponsible behavior in a small enterprise, etc.

## The impact of genre on credit scoring

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**Abstract:** Credit is a fundamental tool for economic growth. The lender limits access to credit, that is to say by the financial institutions that are responsible for distributing cash flows through loans. This limitation is due to the fact that the granting of a loan implies a risk of default by the borrower. So, measuring credit risk is essential for financial institutions because there is a high-level risk associated with wrong credit decisions. The Basel II agreement recommended the use of advanced credit scoring methods in order to improve the efficiency of capital allocation. The latest Basel agreement (Basel III) states that the reserves based on their risk requirements have increased. At the same time, economic autonomy is a fundamental pillar in our society, depending largely on access to credit, where gender seems to be a very important issue to be analyzed from a women's economic inequality approach. Furthermore, the risk aversion has been studied longer, but there are few studies that analyze the effect of apply credit scoring methods. In order to reach an egalitarian and fairer society, progress must be made in the study of the possible causes of these economic differences. It is mandatory to propose solutions for women to access credit on equal terms without implying a greater risk for the financial institution. In this investigation, in the first place, a descriptive analysis of the database will be carried out in order to compare whether there is a similarity in the granting of credit by the financial entity according to the gender variable. Next, the authors calculate and rank which variables are more significant and influential in concessions. Big Data algorithms that have been efficient and effective in predicting credit scoring, as Generalized Linear Model for binary data (GLMlogit) and Linear Mixed Model (LMM) are checked and analyzed, regarding the gender variable of the applicant for equal financial conditions.