

12<sup>th</sup> INTERNATIONAL CONFERENCE  
ON APPLIED ECONOMICS

# CONTEMPORARY ISSUES IN ECONOMY

POLAND 29–30 JUNE 2023

ABSTRACT BOOK

EDITED BY  
ADAM P. BALCERZAK  
ILONA PIETRYKA

SCIENTIFIC INSTITUTIONAL PARTNERS



**SSOR**

SLOVAK SOCIETY FOR  
OPERATIONS RESEARCH

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***Social benefits of clean energy: evidence from Bangladesh***

*JEL Classification:* I31; J46

*Keywords:* energy transition; solar adaption; education; welfare; Bangladesh

**ABSTRACT**

**Research background:** Solar adoption exploded until 2015 in Bangladesh, setting a precedent for electrifying previously unconnected areas worldwide. Improved lighting through solar systems provides immediate benefits with extra hours of household and business activity and extended study hours for school-going children.

**Purpose of the article:** This study aims to find both determinants and welfare gains of solar adoption in rural areas using the three rounds of the Bangladesh Integrated Household Surveys. Besides the new estimates of economic, environmental, and educational welfare gains, our research also contributed by providing evidence of how solar adoption is connected to rural employment and nutrition of under-five children.

**Methods:** We applied both ordinary least squares and propensity score matching techniques to estimate the welfare effects of solar adoption. Households that do not use electricity as their primary lighting source (such as solar and kerosene) are only considered as our sample.

**Findings & value added:** We found that solar adoption is associated with higher income, expenditure, and asset value growth, and a massive reduction in kerosene expenditure than non-adopters. Other findings include solar households that leave sharecropping and pursue trading and poultry farming, and children who are also benefiting from solar adoption in terms of education and nutrition. This study shows that how solar can practically solve different welfare issues where government cannot provide electricity. As recent global shocks made underdeveloped countries more vulnerable to supply enough electricity for whole populations, this research might be helpful for them to find solar as crisis resilience electrification solution.

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### *Environmental turbulence, power in business networks and dynamic capabilities*

*JEL Classification: M31; P42*

*Keywords: environmental turbulence; business networks; power dynamics*

#### ABSTRACT

**Research background:** Contemporary megatrends such as digitalisation, globalisation and, in particular, environmental awareness make the current business environment systemic, complex and volatile. Recent radical crises such as Covid-19, global geopolitical tensions and energy supply crisis are responsible for environmental turbulence in business ecosystems. All these are creating a new world for business networks. The literature emphasises the need to build resilience and adaptive capacity of supply chains or other forms of business networks. The concept of supply chain viability related to survivability is also being demonstrated. Thus, given the unprecedented disruption to business networks and the need for high reactivity and adaptability, it is important to build the adequate dynamic capabilities, with particular emphasis on the need for greater agility. Building business network resilience as a system response to systemic threats does not imply a return to the old normal, but rather involves a sudden jump forward with the adaptation of the 'new' normal. What is emphasised here is not only the rapid reactivity to short-term impacts, but at the same time the structural reconfiguration of business networks in the long term.

**Purpose of the article:** The concepts of power and power dynamics appear to have an important role in the processes of building the resilience of business networks and their structural reconfiguration. The aim of the article is therefore to deepen the understanding of the linkages of environmental turbulence, the building of reactive and adaptive dynamic capabilities of business network actors and the power dynamics in business networks from a systems thinking perspective.

**Methods:** Theoretical and conceptual paper.

**Findings & value added:** Proposition of the conceptual model for the study of power dynamics in business networks from a systems thinking perspective in relation to the level of environmental turbulence and the level of influence of dynamic capabilities on the performance of a business network actors.

# RESEARCH PAPERS



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***The role of trade and FDI in growth-unemployment nexus****JEL Classification: E22; E24; F14; O11**Keywords: foreign direct investment; unemployment; trade; gross domestic product; Okun's law***ABSTRACT**

**Research background:** Unemployment is a huge topic for policymakers, scholars and, in general, society. Historically, there has always been a lot of discussions about this phenomenon. It is already acknowledged that unemployment is closely related to economic activity: when the economy is growing, more people are employed, and when economic activity is low, employment decreases, and unemployment rises. This relation is well researched in a framework of Okun's law. However, it is far less known how this relationship holds if international economic relations are introduced. Thus, the motivation for the research was to examine the role of international trade and foreign direct investment (FDI) on the growth-unemployment nexus.

**Purpose of the article:** To develop a model based on Okun's specification for the empirical analysis of trade and FDI's effect on growth-unemployment nexus.

**Methods:** Scientific literature review, comparative analysis, and panel regression.

**Findings & value added:** Given the lack of research examining what effect FDI and trade have on the growth-unemployment nexus, this paper estimates modified Okun's equation on the European Union (EU) countries (EU-28, by composition of the EU until 31/01/2020) while incorporating international aspects that can have an impact on this nexus. Also, this study develops a specification that can be useful to monitor the potentially different effects of FDI and trade on growth-unemployment nexus during different phases of the business cycle. Data of the research covers the period from 2000 to 2019. The estimations of the panel regression showed that import, export, inward FDI, and outward FDI have a negative effect on the growth-unemployment nexus. With an increase in these variables, the influence of gross domestic product (GDP) growth on unemployment becomes less significant.

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### *Attitudes and behaviors of representatives of the Generation Z on the market of ecological products on the example of Poland and Germany*

*JEL Classification: M20; M31; D90; D12*

*Keywords: Generation Z; ecological behavior; Poland; Germany; consumer behavior*

#### ABSTRACT

**Research background:** The Generation Z accounts for 40% of the world's consumer population. Its representatives set market trends that will shape products and services in the near future. Particular attention in the context of people starting their professional career, who over the next twenty years will be the main purchasing power, is given to combining their purchasing potential with the assumptions of the UN 2030 Sustainable Development Goals concerning, among others, the involvement in pro-ecological activities and environmental protection, both on the institutional and business levels. Taking into account the potential and characteristics of the Generation Z it seems reasonable to ask the question to what extent they are ready to convert the declared values into actual purchasing decisions.

**Purpose of the article:** The main purpose of this article is to assess the attitudes and identify the behavioral determinants of the Generation Z in Poland and Germany on the market of ecological products.

**Methods:** A review of studies available in the literature related to trends in the behavior of consumers from the Generation Z and the ecologization of consumption was conducted. Moreover, empirical research using the CAWI methodology was carried out with the participation of representatives of the Generation Z from Poland and Germany (sample of 163 Polish and 148 German consumers).

**Findings & value added:** The research showed a difference between more pro-ecological Germans and less ecologically sensitive Poles, automatically showing that a higher concern about the environment also positively influences the willingness to base the purchasing behaviour on products and actions presented as more ecologically friendly. As the first one, the research emphasizes intra-EU differences amongs neighbours and the "old" and "new" EU member states after the announcement of new pro-environment actions of the European Commission and during the growing number of youth ecological movements.

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### *The potential of intellectual capital as a source of competitive advantage for banks*

*JEL Classification: G21; O34; J24; M21*

*Keywords: competitiveness; intellectual capital; bank*

#### ABSTRACT

**Research background:** Most of the available analyzes on building banks' competitiveness were based on typical financial ratios. The challenge for every modern bank is not just understanding the meaning of intellectual capital, but defining its elements and determining measures that enable its effective management, leading to the improvement and maintenance of a strong competitive position.

**Purpose of the article:** The aim of the article is to systematize the definition of a bank's intellectual capital and to indicate its role in building a bank's long-term competitive position using multidimensional statistical analysis — classification tree (CART method).

**Methods:** The method used in the article are classification trees, using the rule of recursive division. This method consists in a gradual division of the multidimensional space of features (indicators) into disjoint subsets until they become homogeneous due to the distinguished feature  $y$  (indicator). Then, in each of the obtained segments, a local model for the  $y$  feature is built. The basis for the analysis of the competitiveness of banks based on classification trees will be the results of the ranking of banks, created on the basis of a proprietary synthetic measure. The three best banks in a given year (places 1–3 in the ranking) will form group A; further banks that will be ranked 4–7 in the tree-based analysis are group B; while the last three banks in the ranking (places 8–10) will form group C. The study will be conducted on a group of 10 listed banks included in the portfolio of the WIG-banks sub-index.

**Findings & value added:** The conducted analysis will allow to find rules (based on diagnostic indicators) classifying banks into separate groups (A, B, C). This will lead to the conclusion which indicators from the economic (EC) and intellectual (IC) capital layers have the greatest impact on the competitiveness of banks (2009–2020).

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### *Econometric modeling of the influence of indirect taxation on the shadow economy and economic development*

*JEL Classification:* O17; E63; H26

*Keywords:* shadow economy; macroeconomic stability; economic growth; indirect tax; tax revenues; economic development

#### ABSTRACT

**Research background:** The increasing indirect taxes rate, on the one hand, affects the purchasing power of the population and leads to the use by economic entities of additional, often shadowy, schemes of buying and selling goods. On the other hand, the level of the tax burden is directly related to the volume of budget revenues and the level of economic development of the country.

**Purpose of the article:** The article deals with modeling of the influence of indirect taxation on the level of shadow economy and economic development on the example of the EU countries.

**Methods:** The dependence between the indicators was analyzed using the Dickey–Fuller and Breitung unit root tests, the criteria of Akaike, Schwartz, Hann–Quinn, the ratio of the logarithms of the probability functions, and the criterion of the final forecast error. The modeling of the dependence of the levels of shadow economy and economic development on indirect tax revenues was carried out using VEC modeling.

**Findings & value added:** The calculations confirmed the hypothesis of a chain relationship between indirect tax revenues, levels of shadow economy and economic development of the country. The levels of shadow economy and economic development are most sensitive to changes in the volume of VAT revenues (a 10% increase in VAT revenues leads to an increase in the level of shadow economy by 11.4% and economic development by 12.5%). The growth of excise tax revenues is accompanied by an increase in the level of shadow economy by 7.8% and economic development by 2.5%. It was concluded that the object of increased attention should be the administration of VAT through the introduction of electronic tax control, automation of tax reporting processes, control over the legality of tax credit accrual.

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### ***Neuromarketing and behavioral research in the promotion of educational products: state of the art, main determinants, implementation model***

*JEL Classification: M31; M37; O31*

*Keywords: neuromarketing; immersive marketing; bibliometrics; educational product implementation*

#### ABSTRACT

**Research background:** the concept of neuromarketing in educational product promotion is the subject of study due to the possibility of two-way “penetration” into the brain of potential and real consumers of educational services. Neuromarketing “from the outside” (the use of emotions and feelings when advertising an educational product) and neuromarketing “from the inside” (“immersion” in the educational process, participation in the creation of educational scenarios) require a comprehensive study using behavioral experiment and immersive learning technologies. The formation of the educational program brand by the “immersion” in preparing scenarios for its promotion determines the originality of this work.

**Purpose of the article:** Construct the two-way model of immersive educational marketing, a combination of neuromarketing and sensitive marketing, identifying the determinants of the model's effectiveness.

**Methods:** bibliometric analysis, immersive technologies in education, “black”, “gray”, and “white” box modeling, analogies with software testing methods, behavioral experiments.

**Findings & value added:** the concept of immersive marketing assumes that a customer who is no longer a “guinea pig” will take part in advertising an educational product and creating its brand. Replacing the passive role of the customer (the perception of the educational product and the corresponding reactions that are the subject of analysis to improve the marketing strategy) with the active one (direct participation in the process of building the brand of the educational product and improving the marketing strategy) is the main technique that will enhance the effectiveness of educational marketing services.

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### *Monetary policy shocks and exchange rate in Sub-Saharan Africa*

*JEL Classification: E; E5*

*Keywords: monetary policy shocks; exchange rate; Sub-Saharan Africa; panel data analysis*

#### ABSTRACT

**Research background:** The recent global pandemic and economic crises have been greatly felt by countries of which countries in Sub-Saharan Africa (SSA) have been affected most. Thus, there have been pervasive distortions in financial and exchange rate markets particularly due to frequent depreciation of currencies in the region. This situation is exacerbated by monetary policy shocks and the limited efforts of governments to rely on fiscal policy to address it. However, to avert this situation, a credible monetary policy can be the answer through its effects on real economic outcome. Despite the role monetary policy plays in influencing the stability of the financial and exchange rate markets, only a few studies have been done in this regard, with, no study being carried out in Sub-Saharan Africa to the best of the researcher's knowledge.

**Purpose of the article:** This paper examines the effect of monetary policy shocks on exchange rate in Sub-Saharan Africa (SSA).

**Methods:** This paper employs the balanced dynamic panel methodology based on a sample of 23 countries in Sub-Saharan Africa using quarterly panel data for the period 2013 to 2022. The paper also employs the Blundell and Bond system General Method of Moment (GMM) technique for estimation.

**Findings & value added:** The paper finds that contractionary monetary policy shocks lead to appreciation of the exchange rate and vice versa. This paper contributes to knowledge in terms of the monetary policy and exchange rate relationship which was limited in the case of SSA. Practically, the paper sheds more insight into how monetary policy shocks can bring about probable changes in exchange rate in SSA thereby informing monetary policy authorities and policy makers.

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### *Barriers to setting up and running companies at the local level*

*JEL Classification:* L26; L53; P43

*Keywords:* entrepreneurship; barriers of entrepreneurship; local development

#### ABSTRACT

**Research background:** The reasearch results of many authors(e.g.: Adamowicz, Zwolinska-Ligaj 2021; Makiela 2008; Gundry, Ben-Yoseph 2004; Fielden et all 2000) indicate that entrepreneurs face many challenges. The research conducted in 2019 by the Association of Polish Employers shows that entrepreneurs from the SME sector complain primarily about high taxes, labour costs and bureaucratic obligations.

**Purpose of the article:** The purpose of the article was to present barriers that are associated with the establishment and development of enterprises at the commune level. At the same time, , an attempt was made to determine which of the factors hindering the establishment and development of enterprises at the local level are most important. A hypothesis was made that there are differences between the local government authorities and entrepreneurs in their approaches to hierarchy the barriers associated with business activity in the commune.

**Methods:** Since the leading source of information was primary data, it was collated using a survey method. For this purpose, two original questionnaires were prepared, one was addressed to enterprises and the second was addressed to local government units. Data was obtained from 471 enterprises operating in the Warmińsko-Mazurskie voivodship and its all 116 communes. In order to o verify the adopted hypothesis, using the primary data, the importance indicator was calculated for each of the barriers. In such a way it was possible to prioritise barriers and present differences in perceptions of these barriers by the communal government authorities and entrepreneurs.

**Findings & value added:** The most important limitations to the activities of entrepreneurs from the warmińsko-mazurskie voivodeship was on one hand the functioning of the regional market, in particular its size and the level of populations' income, which determine society's consumption possibilities, and therefore indirectly affect the size of the market. On the other hand, barriers were associated with entrepreneurs' activities, which may have been hindered by problems with the availability of raw materials or an insufficient number of cooperators and suppliers. Moreover comune representatives expressed their opinion that the size of the regional market and the income of the population are important factors limiting entrepreneurship. However, in their opinion, high labor costs, the current tax system, bureaucracy, distance from main communication routes as well as the location and condition of road infrastructure are the key barriers to the establishment and development of companies.

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### *The impact of artificial intelligence on the agri-food industry cluster*

*JEL Classification: O13; O14; O47*

*Keywords: development economics; digital transformation; technology development; agri-food industry; cluster*

#### ABSTRACT

**Research background:** The research focuses on the impact of artificial intelligence (AI) impact on agri-food industry cluster from labor market perspective. Researches on the impact of AI on the agri-food cluster labor has produced both optimistic and pessimistic projections. On the one hand, AI has the potential to increase productivity and efficiency in the sector, leading to higher quality jobs. However, there are concerns that AI may lead to job displacement, wage reductions, and an overall decline in employment opportunities, particularly for low-skilled workers. These conflicting projections highlight the need for a better understanding of the impact of AI on the agri-food cluster.

**Purpose of the article:** The aim of this research is to investigate the impact of artificial intelligence on the Agri-food industry cluster from labor market perspective.

**Methods:** Systematic and comparative analysis of scientific literature, expert evaluation, methods of descriptive statistics.

**Findings & value added:** The expert evaluation carried out during the research revealed that rather than the entire job being eliminated, there may be a reorganization of tasks within the job profile (with some tasks added and others removed). Agri-food industry workers in the transformed occupations will be complemented by AI.



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*Transboundary movements of plastic wastes as a constraint for the environmental and economic sustainability*

*JEL Classification:* Q53; Q57; Q5

*Keywords:* plastic waste; circular economy; sustainable development

ABSTRACT

**Research background:** In the face of contemporary environmental and economic challenges, a transition to more sustainable global plastics economy is crucial. Countries are implementing their own circular economy solutions, but one of the remaining, common problems is so called “waste tourism” — export of plastic waste to other countries, mainly less developed. It contributes to global environmental problems but frequently surfaces also as inefficient resource management/trade and an ethical question as well. Until recently, no common approaches has been agreed to deal with this issue at the international level. Undertaking, that could help shift to a more sustainable plastics economy is the Basel Convention.

**Purpose of the article:** The aim of the article is to determine the scale and directions of transboundary movements of plastic wastes. This will be shown in the context of environmental challenges, resource efficiency and ethical issues. Attempts to regulate this phenomenon at the international level (Basel Convention) will also be assessed.

**Methods:** Statistical and intuitive. The considerations are based, to a great extent, on literature on the subject-matter and secondary statistical data (mainly Eurostat and UN Comtrade).

**Findings & value added:** The amount of plastic waste is increasing, and at the same time the volume of its transboundary trade. The main recipients of plastic waste are less developed countries, with negative consequences not only for them but also for the global environment. Basel Convention helps to provide greater control over international trade but the most work to be done in shaping a more sustainable global plastics economy is on the part of individual countries.

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***Diversification of rural development in Poland: considerations in the context of sustainable development***

*JEL Classification:* O210; Q15

*Keywords:* sustainable development; rural areas in Poland; JENKS; local development

ABSTRACT

**Research background:** A change in the understanding of rural policy took place in the eighties of the last century when there was a transition from a sectoral to a territorial perception of rural areas. Rural areas are no longer identified only with agriculture. There has been a recent decentralisation of rural policy to the regional and local levels, which requires recognition of the diversity of rural areas and the changes taking place in them. Diversity requires flexibility in the EU and national programmes so that the potentials and conditions shaping agricultural space can be taken into account. Therefore is important to recognise the state of sustainable development and disparities at the local level so that the targeted support is appropriate.

**Purpose of the article:** The aim of the research is to measure sustainable development, including spatial diversification.

**Methods:** The measurement of sustainable development was carried out using synthetical measures, and measures for economic, social and environmental orders were constructed. The Jenks method was applied to group entities into classes characterised by similar levels of development. The measurement was made for all rural and urban-rural communes in Poland. The results are shown on maps.

**Findings & value added:** The results of the research proved the significance of differences in the scope of balanced development for each of the orders. The resulting spatial systems are characterized by logic regulating the space on the line of the center — periphery. The obtained research results are valuable for central and local authorities in the process of planning local development.

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### *Trends in tourism development in European Union countries before and after the Covid-19 pandemic: when will the global tourism industry recover?*

*JEL Classification:* C51; C53; Z32

*Keywords:* tourism intensity indicators; Covid-19; EU countries; trend models; adaptive models

#### ABSTRACT

**Research background:** Tourism is becoming an increasingly important branch of the global economy. At the same time, it is among the industries most affected by the Covid-19 pandemic, with an October 2020 UN report stating that up to 120 million tourism jobs were at risk and that the industry could lose as much as \$1 trillion in turnover in 2020.

**Purpose of the article:** The purpose of the article is to determine the development trends of tourism, before and after Covid-19, and to try to answer the question: When will the tourism industry recover, and is it possible to quickly restore the situation before the pandemic?

**Methods:** Two research approaches were used to build forecasts of selected tourism intensity indicators. In the first, to build forecasts trend models with seasonal fluctuations estimated based on monthly data before the Covid-19 pandemic were used. The forecasts were corrected taking into account the current situation in the tourism market in each EU country. Various measures of dynamics were used to estimate the value of the adjustment factor. As part of the second research approach, Holt–Winters adaptive models were used.

**Findings & value added:** The analysis shows that EU countries have coped with the Covid-19 to varying degrees. Some of them, such as the countries located in Southern Europe, began the process of recovering to pre-pandemic levels of tourism market activity relatively quickly. Surprisingly, this does not apply equally to all countries in the region (e.g. Italy). The number of cases of Covid-19 is an important factor in determining the attractiveness of particular destinations traditionally considered particularly attractive by tourists. The added value of the work is the original research approach used by the authors, combining various statistical-econometric methods to predict the direction and rate of change of the reconstruction of the global tourism industry.

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### *Public participation in rural areas during COVID-19: the village fund in Poland*

*JEL Classification: H72; O35; Q01*

*Keywords: village fund; public participation; rural areas; participatory budgeting*

#### ABSTRACT

**Research background:** the processes of public participation in rural areas in Poland can take various forms, but one of the most common is village fund. In the literature, it has been subjected to various analyses (paying attention to, among other things, legal, financial or sociological aspects), which gives an accurate picture of it from the period before COVID-19. In contrast, so far no research has been undertaken on the changes that occurred in the functioning of village funds during the pandemic period.

**Purpose of the article:** The purpose of the article is to examine how the functioning of village funds changed during the COVID-19. Specifically, in terms of the reasons for abandoning, changes in scale and directions of disbursements.

**Methods:** The article uses an analysis of source documents (resolutions of municipalities Councils) and statistical analysis of data on the scale and directions of expenditures of Polish municipalities from village funds in 2019–2021.

**Findings & value added:** The analysis conducted indicates a relatively small decrease in the use of village funds during the Covid-19 pandemic in the studied group of municipalities. The analysis of local legal acts showed that municipalities resigning from the village fund saw a significant deterioration in their financial situation and indicated the possibility of continuing spending on local tasks outside the formula of the village fund. On the other hand, in a large part of municipalities the structure of village fund expenditures changed. An important added value of the article is that it complements the achievements of the theory of public participation with the empirical context of the functioning of participation mechanisms in times of crisis.

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### *Competitiveness and innovation of small and medium enterprises: a comprehensive bibliometric analysis*

*JEL Classification: L11; L25; O31; R11*

*Keywords: innovation; competitiveness; SMEs*

#### ABSTRACT

**Research background:** Competitiveness preconditioned by innovativeness and continuous technological progress is a challenge for countries and regions that want to develop in the Industry 4.0 and 5.0 context. Under this approach, the issue of innovativeness is becoming more and more important for the development of every enterprise and economy.

**Purpose of the article:** The article aims to present the structure and dynamics of research on the competitiveness of SMEs shaped on the basis of their innovativeness to further guide both research and management practice.

**Methods:** This study employs bibliometric analysis to identify the key authors, journals and countries conducting empirical research in this field. Additionally the authors use the VosViewer Software to map the main themes undertaken by researchers of the SME competitiveness and innovation field. Finally the systemic analysis of the selected articles was conducted to define the dominating research methods and trends.

**Findings & value added:** As the results of the bibliometric analysis show, the competitiveness of SMEs from the perspective of their innovation is a topic more and more often taken up by researchers, in particular by researchers of the European Union. The mapping and systematic review of selected items made it possible to identify the essential topics of the field – innovation capability, the role of entrepreneurship, individual capabilities, and environmental issues of SMEs. Additionally, future research scenarios were suggested and discussed.

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### *Predictive strength of Macroeconomic Imbalance Procedure (MIP) indicators*

*JEL Classification:* A11; A14; B16

*Keywords:* Macroeconomic Imbalance Procedure; MIP; crisis forecasting; European Semester; economic policy

#### ABSTRACT

**Research background:** MIP is one of the pillars of the economic crisis prevention procedure. Predictive power of individual indicators has not been tested before their introduction.

**Purpose of the article:** Evaluation of the predictive strength of 14 main and 44 auxiliary MIP indicators in relation to multidimensional crises in the EU countries.

**Methods:** We used Bayesian Model Averaging to test the ability of MIP indicators to correctly predict crisis episodes in the period between 2008 and 2019 in all EU Member States.

**Findings & value added:** This work is novel in its application of BMA to test the predictive strength of all MIP indicators. Our results show that only four main indicators (house price index, nominal unit labour cost index, general government sector debt, and export market shares) and another four auxiliary indicators (residential construction as percentage of GDP, activity rate, people living in households with very low work intensity, and export performance against advanced economies) seem to be able to predict the upcoming crises.

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### *Grammatical mood and assessment of support policy effectiveness*

*JEL Classification:* E65; E71; H23

*Keywords:* grammatical mood; language; policy effectiveness; Covid-19; experimental economics

#### ABSTRACT

**Research background:** The COVID-19 pandemic affected economic research, which in various aspects analyzed the impact of the virus on the operation of both whole economies and specific sectors as well as activities of individual enterprises. The most popular subjects of the analyses so far have been the impact of the pandemic on the labor market, various sectors of the economy (including transport and tourism), and the climate. However, there is still a gap in the studies of the connection between economics and linguistic aspects (language).

**Purpose of the article:** The syntagm “language-economics” varies in meaning: on the one hand, focuses on the effect of language on selected fields of economic activity, and on the other hand, describes the effects of economics on language. In this work, the authors decided to develop the first approach and analyze how linguistic variables can influence economic categories: the subject of interest was examining the influence of the grammatical form used in communication on assessing the effectiveness of the conducted economic policy.

**Methods:** The authors used the experimental method — 304 persons participated in the study. The experiment was a field one and consisted of two phases. The intervention set in this manner was to indicate if replacing an indicative mood with a conditional mood would affect the answers given by respondents. Using the ANOVA tests and including the OLS regressions into the model, it was revealed that non-standard factors (in our view, concerning the way of formulating the message through the grammatical form/mood used) might affect the effectiveness of the implemented policies.

**Findings & value added:** Authors show that language may also be an essential framing instrument, while various grammatical moods affect the perception of messages that concern economic issues differently and are perceived differently depending on the level of identification with a given policy.

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### *A sophisticated model of creative accounting in Slovakia*

*JEL Classification: C55; M21; M42*

*Keywords: creative accounting; creative accounting model; anomaly; anomaly index; clustering*

#### ABSTRACT

**Research background:** Accounting techniques that incorporate creativity have produced a new instrument that entrepreneurs can use to improve their financial and economic circumstances. The concept of creative accounting emerged in the second half of the 20th century and persists with minor modifications to this day. To prevent the use of creative accounting, it is crucial to develop studies that can identify, based on a variety of input data, the illegal behaviour of business owners.

**Purpose of the article:** The purpose of this article is to develop a model for revealing creative accounting at the level of individual business entities in the Slovak Republic.

**Methods:** The methods presented in this article centre on the detection of anomalies, or the search for data deviations that deviate from normal behaviour. The model was developed using a sample of 30,130 companies and then evaluated based on its success in identifying fraudulent companies found guilty of manipulative and creative accounting in the Slovak Republic.

**Findings & value added:** In analyzing the results from the created model with 30 companies found guilty of manipulative behavior, the success rate of this model is approximately 46.67 percent, based on a comparison of the results of the companies detected by the model with the companies found guilty. The added value of this model, which is divided into eight outputs in the form of eight regions, is to make the work of regulatory and law enforcement authorities easier.



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### *Corporate bankruptcy and restructuring during the Covid-19 pandemic: evidence from the fsQCA approach*

*JEL Classification:* G33; G34; H81; O57

*Keywords:* corporate bankruptcy and restructuring; the Covid-19 pandemic; economics and finance; anti-crisis policy measures

#### ABSTRACT

**Research background:** The COVID-19 pandemic severely disrupted the global economy and financial markets. The article investigates the impact of the COVID-19 crisis on corporate bankruptcy and restructuring related to the types of insolvency procedures and their industry and localization in selected Central and Eastern European countries during the Covid-19 period. It is worth emphasizing granting public aid to rescue or restructure companies, referred to as The New Chance Policy. The study has significant economic implications because restructuring and continuing the enterprise's operation can benefit many stakeholders on a micro- and macroeconomic scale.

**Purpose of the article:** The article aims to indicate and evaluate the determinants of corporate restructuring under the Covid-19 crisis conditions in selected Central and Eastern European countries.

**Methods:** This study focuses on fuzzy-set Qualitative Comparative Analysis (fsQCA) in economic crisis research. The study concentrates on implementing the fsQCA approach to identify, compare and evaluate the determinants of corporate restructuring in selected Central and Eastern European countries based on macro- and microeconomic perspectives. The study uses the Localization Index (LQ) methodology to discuss the regional bankruptcy concentration.

**Findings & value added:** This article shows how a new approach can overcome the knowledge gap of current attempts to assess corporate bankruptcy and restructuring in the Covid-19 pandemic. The total number of bankruptcy and restructuring proceedings during the Covid-19 pandemic has increased. However, introducing a new simplified form of restructuring, namely the procedure for approval of the arrangement under the anti-crisis shield, significantly impacted this increase. The results of the conducted analyzes are essential in shaping the sectoral policy toward corporate restructuring. Business owners, banks, financial institutions, and government and self-government administration representatives may use the analysis.

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*Taxonomic assessment of sustainable development diversification of functional urban areas of voivodship capitals in Poland*

*JEL Classification: R11; Q01*

*Keywords: sustainable development; functional urban areas*

ABSTRACT

**Research background:** Sustainable development is currently the main development paradigm, including also urban areas. According to the most popular definition, it is a development in which meeting the needs of the present generation doesn't limit the ability of future generations to meet their needs. In Poland, about 60% of the population lives in cities. They are therefore an important subject of development policy. The limits of the city influence do not end at the administrative borders, but there are functional links with the surroundings. Functional urban areas (FUA) in Polish reality were established together with a new instrument of the EU cohesion policy of 2014–2020 — integrated territorial investments and their activities will be continued. Therefore it is still important to analyze development conditions and needs of FUAs in order to conduct an effective development policy.

**Purpose of the article:** The aim of the article is to assess the diversity of functional urban areas of capital cities of voivodships in Poland in terms of sustainable development.

**Methods:** The TOPSIS (Technique for Order of Preference by Similarity to Ideal Solution) method was used to conduct the research, which allows for linear ordering of objects based on synthetic development indicators. The research used available indicators from the Statistics Poland database for functional urban areas.

**Findings & value added:** The added value of the research is a better understanding of the variability of the FUAs development. Thanks to this, it is possible to pursue suitable development policy, which is important in the context of the new EU financial perspective and the achievement of sustainable development goals.

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***Understanding the potential impact of organizational resilience on public service quality: empirical evidence****JEL Classification: D81; D83; D91**Keywords: organizational resilience; public service; impact assessment; structural equation modeling***ABSTRACT**

**Research background:** Amid the Covid-19 pandemic, public sector entities encountered extraordinary difficulties in upholding the delivery of public services. They were ill-equipped to operate in the unpredictable circumstances of the pandemic, causing a significant impact on the accessibility and quality of public services. Nevertheless, this scenario has also highlighted the importance of the resilience of the public sector, which explains organizational capacity to function in a crisis setting and uncover opportunities that might not have been evident during normal circumstances.

**Purpose of the article:** This study aims to assess public sector resilience development trends and their impact on the quality of public services. As resilience is realized through a three-phase prism, i.e., Planning, Adaptation, and Enhanced Learning, we hypothesize that Adaptation is endogenously interrelated with Planning and positively affects Enhanced Learning, which positively impacts service quality.

**Methods:** Two successive surveys were carried out to examine the links between organizational resilience and service quality in the public sector. The first involved interviewing 401 head managers of public service organizations to assess their level of organizational resilience. The second survey involved questioning customers aged 18 and above who had used the services of the previously surveyed organizations. 3609 public service users were interviewed to gather data on service quality. Structural equation modeling was performed to analyze the data collected.

**Findings & value added:** The results of structural equation modeling revealed that Enhanced Learning positively and significantly affects Service Quality. Findings suggest that the bounce-back stage of organizational resilience, i.e., Adaptation, indirectly affects Service Quality through the bounce-forward stage, i.e., Enhanced Learning. Thus, Enhanced Learning acts both as an accelerator of Service Quality and as a moderator of the effect that other stages of organizational resilience have on Service Quality. The primary contribution of the article is its discovery that Service Quality develops from Enhanced Learning, implying that the approach towards service is based on newly acquired knowledge and experience during challenging times. Furthermore, this enables organizations to transform their service delivery in response to the realities of changing circumstances, thereby creating opportunities to prepare for future challenges from the standpoint of a new equilibrium.

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### *Effect of POI density on housing prices: a case study of three Polish cities*

*JEL Classification: C21; R30*

*Keywords: points of interest; housing prices; spatial quantile regression*

#### ABSTRACT

**Research background:** This paper shows the usefulness of open-source points of interest (POI) data for understanding the causes of volatility in residential property prices. Points-of-Interest are unique locations or features cartographically mapped in space and connected explicitly to various aspects of human life. The number and density of these points primarily reflect the spatial structure of a city. Therefore, they may indicate a higher quality of life in a given urban zone, which translates into a higher demand for flats in the neighbourhood and, consequently, higher housing prices.

**Purpose of the article:** In the paper, we attempted to answer whether the number and types (categories) of POIs, which usually correspond to the so-called urban facilities mentioned above, can explain housing price variability. In our research, we thus posed a thesis that the higher density (of all categories) of points of interest positively affects housing prices.

**Methods:** In the course of the study, a regression model was used, both in classical form and also a quantile regression model and a spatial quantile regression model.

**Findings & value added:** The study was conducted in the area of three Polish cities: Olsztyn, Warsaw and Poznań. The results of our study show that the importance of POIs for the formation of housing prices is reflected in the form of synergy. While individual categories tend to have little significance, the simultaneous occurrence of many various points definitely has a positive influence on prices.

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### *Assessment of clusters business model efficiency in digital transformation conditions*

*JEL Classification: C38; M20; M21*

*Keywords: business model; cluster; digital transformation; digitalization; technology*

#### ABSTRACT

**Research background:** Nowadays, traditional business models are becoming less and less efficient, so the transformation of models is inevitable, reflecting the aspirations of the European strategy, pandemic or geopolitical challenges.

Companies need to find ways to innovate with digital technology to create business strategies that add value to customers and improve performance.

This paper analyzed the improvement of cluster business models in order to achieve maximum efficiency in the conditions of digital transformation in Lithuania.

**Purpose of the article:** to identify the causes of business models efficiency in the context of digital transformation in Lithuanian clusters.

**Methods:** Comparative and systematic analysis of scientific literature. The following methods are planned to include statistical data analysis and expert evaluation.

**Findings & value added:** (1) 93 percent of cluster coordinators indicated that they plan to digitize their business processes within five years, only 7 percent. clusters do not plan business digitization due to too small company and production volumes and the lack of additional need for companies that have already implemented digitization to do it again. (2) Digital technologies for the vast majority of clusters mean a competitive advantage in the sector in which the cluster organization operates. (3) The sectors of the most popular digital technologies that will most affect cluster organizations are named: aircraft-based systems, artificial intelligence, continuous data exchange and collection, business management systems, automation and intelligent production, robotics.

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### *Digital loans and buy now pay later (BNPL) from the LendTech versus bank loans in the era of "black swans": complementarity or substitutability?*

*JEL Classification:* D14; G23; K36

*Keywords:* FinTech; LendTech; BNPL (buy now; pay later); black swan; consumer finance

#### ABSTRACT

**Research background:** Widespread perception of non-banking loans and bank loans point to the usage of credit loans primarily by people who are credit-excluded from accessing bank offers. The growth of e-commerce and the increasing digitalization of customer interactions with banks was particularly accelerated by the COVID-19 pandemic (the first "black swan"). These processes have also influenced the rapid growth of the LendTech sector, as a part of FinTech with its digital loans and buy now pay later (BNPL) offer. The war outbreak in Ukraine (the second "black swan") has led to the energy crisis, increased inflation, interest rates and credit costs, and reduced its accessibility. In this context, the following research questions are justified: Are the LendTech sector and the banking sector complementary or substitutive in the area of consumer financing? Does complementarity/substitutability apply to all customer segments and loan amount ranges? How does the extent of complementarity or substitutability of the LendTech sector depend on, and to what extent do changes in the regulatory and macroeconomic environment affect the interaction between the banking and LendTech sectors?

**Purpose of the article:** The aim of the article is to identify trends in the LendTech sector as part of FinTech in the context of assessing the scale and determinants of current and future complementarity/substitutability of the non-bank sector and the banking sector in the area of consumer credit.

**Methods:** In this paper the following methods were used: a pioneering survey of leading LendTech companies in Poland, a critical analysis of the literature and a positive economic analysis of the law. The Horvitz-Thompson estimator with Sen-Yates-Grundy variance form was used to estimate net operating income for LendTech from the online channel in 2021. The selection of Lendtechs was carried out according to the concept of the monetary sampling unit. Through cooperation with the LendTech Foundation and PZIP, the realization of the survey in the drawn entities and the reliability of the information obtained were ensured. The selection of companies to deepen the survey was non-random, as the desire was to obtain as many expert opinions as possible.

**Findings & value added:** Black swans (the COVID-19 pandemic and the war in Ukraine) and the current macroeconomic situation do not significantly affect demand for non-banking loans. The reduction in the opportunities for the LendTech sector as a result of anti-usury regulations will only lead to a shift in consumer demand to the pawnshop sector and the shadow economy, which will be detrimental to consumers. There is complementarity between the LendTech and banking sectors, although for seniors and loans for higher amounts the dominance of banks is apparent, and for loans for lower amounts and in younger age groups the dominance of non-bank institutions. LendTechs perceive that inflation and rising interest rates will increase the scale of credit exclusion at commercial banks.

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***The role of the LendTech sector in the consumer credit market: household financial exclusion context****JEL Classification:* G21; G23; O33*Keywords:* fintech; lendtech; credit; financial exclusion; lending platforms**ABSTRACT**

**Research background:** According to the World Bank (2020), about 60% of adults in developing countries do not use formal financial services. Furthermore, according to the Polish Association of Loan Institutions (2022), about 3 million Poles use loans, most of them in the online channel. Among the reasons for the growing interest in the non-bank consumer lending market for more than a decade are the development of modern technology applications in finance and the establishment of the LendTech sector.

**Purpose of the article:** Verification of the LendTech sector role in the consumer credit market in the context of household financial exclusion. The following research questions were asked: what are the behaviors and preferences of those who use consumer credit offered by LendTechs? Do credit-excluded households take advantage of the LendTech sector's offerings, and to what extent? Do and what socio-demographic characteristics differentiate the factors considered by consumers when taking out loans offered by LendTechs? Whether the use of LendTech loans is due to credit exclusion or other factors? How might the LendTech sector's anticipated changes affect the extent of financial exclusion?

**Methods:** The paper uses the following methods: critical analysis of the literature, Kruskal–Wallis test, Mann–Whitney test, and non-parametric regression algorithm: K-Nearest Neighbors, as well as inductive inference methods. The data used is primary in nature and comes from a nationwide survey, September 2022 (CAWI method) of 1,200 Poles, of which 200 respondents are LendTech customers. The quota selection applied made it possible to reflect characteristics corresponding to the population of customers of lending institutions registered in BIK databases.

**Findings & value added:** The article is a pioneering study based on independent research. The study was focused on the Polish LendTech market considered in terms of its relationship to credit exclusion, one type of financial exclusion. Among the key findings were: digital loans offered by LendTechs are an important instrument for the inclusion of credit-excluded people; socio-demographic characteristics are not a significant determinant of LendTech use and do not differentiate factors considered by LendTech customers.

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### *The role of knowledge management: leadership and implementation of multiple quality management systems*

*JEL Classification: A11; A14*

*Keywords: knowlwdge management; leadership; total quality management; total productive maitenance; lean six sigma*

#### ABSTRACT

**Research background:** The manufacturing sector is negatively influenced by low manufacturing efficiency, fluctuations in quality, high rate of repair and defects and process variability. To gain a competitive edge and survive in economic markets manufacturing companies should be able to handle different management systems. Thus, a framework combining different management methodologies with Industry 4.0 technologies, focused on the achievement of the SDGs of Agenda 2030 is needed. In this respect, knowledge management covers a significant role in any organization for prospering and surviving in the complexity of markets. The role of knowledge is a crucial element in leadership according to standard ISO 9001:2015. Thus, leadeship forms the basis of modern business.

**Purpose of the article:** The purpose of the article is twofold. The former concerns the investigation on the role and the impact of leadership in the implementation of multiple quality management systems such as Total Productive Maintenance (TPM), Total Quality Management (TQM) and Lean Six Sigma (LSS) in business organizations. The latter is creating an integrated approach that exploits and combines the benefits of these three methods.

**Methods:** To define the role of leadership, a comprehensive review on the implementation of Total Productive Maintenance (TPM), Total Quality Management (TQM) and Lean Six Sigma (LSS) is carried out.

**Findings & value added:** The framework proposes an integration among three different methodologies, TPM, TQM and LSS, to achieve improvements in production flows and a better understanding on the role of leadership in the man-machine integration towards a society 5.0 transition. Findings highlight the importance of leaders to initiate change, inspire a shared vision, motivate groups of people towards a common goal, and model the skills and behaviours necessary to achieve set goals. Thus, it is outlined the new role of leadership in an organization that is crucial to helps maximize efficiency also implementing multiple quality management systems.



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### *Structural change and economic growth: causality relationships in the case of Poland*

*JEL Classification:* O11; O14; L16; J21; E19; E20

*Keywords:* structural change; sections of economic activity; economic growth; employment; Granger causality

#### ABSTRACT

**Research background:** Structural change and economic growth characterise any process of economic development and have a relevant research background. However, the research on identifying the character of relationships between the phenomena is not conclusive. Researchers either find that economic growth induces structural change and the process is demand-driven, that structural change determines economic growth and the dependencies are supply-driven, or that the relationship is two-directional with overlapping interdependencies. Moreover, the association may be shaped differently depending on the specific development conditions of each economy and transform over time.

**Purpose of the article:** The aim of the study is to investigate the relationships between economic growth and structural change in Poland using state-level quarterly data for 2008–2022. It empirically verifies whether economic growth determines structural change or whether changes in economic structure influence growth in this specific national context, giving insights into the character of the developmental interdependencies.

**Methods:** The paper examines causality using the Granger test and analyses the relationships with VAR models. It uses some alternative measures of structural change, namely the Norm of Absolute Value (NAV) and Modified Lilien Index (MLI), to catch labour reallocation across sections of economic activity (NACE Rev. 2). They are then adopted in lead-lag models of relationships with economic growth.

**Findings & value added:** The study browses the traditional three-sectoral approach to structural transformation using a more detailed structural layout to capture its modern character. It is focused on a specific situation in the Polish economy for which the relationships have not yet been verified. The results suggest a rather unidirectional causality running from economic growth to structural change and, thus, a demand-driven character of structural modernisation of the Polish economy.

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### *Circular economy in the healthcare sector: an overview on sustainability standards and certifications*

*JEL Classification: I15; Q54; Q56*

*Keywords: circular economy; healthcare sector; sustainability; standards; certifications*

#### ABSTRACT

**Research background:** According to the Health Care Without Harm (HCWH) Annual Report 2021, the healthcare sector produces 2 gigatons of CO<sub>2</sub>, translating into 4,4 % of the global ecological footprint. Currently, to handle this impacting trend, the sustainable delivery of care represents a strategic target. The exploitation of standards criteria, supported by the specific tools within the Industrial Ecology framework, could improve the circularity of the processes, reducing the End of Life of the resources. Moreover, a significant gap in a global vision of international standards and certifications for promoting the improvement of circularity emerges. Specifically, the current study step carries out a literature review of the main critical aspects/drivers concerning the sustainability outcomes for the healthcare sector.

**Purpose of the article:** Based on the research background, for balancing rising cost pressures against limited resources, the authors argue how necessary the development of a healthcare sector is suited for comprehensively incorporating the three pillars of sustainability.

**Methods:** A systematic review, using several keywords, was performed to identify international standards appropriate for the healthcare sector, (found in Scopus, Google Scholar, and Science Direct), and then, following a screening phase, including the selection of criteria of the sources, a qualitative content analysis was conducted to assess the correlation between the implementation of the standards and the circularity in the sector (value stream approach).

**Findings & value added:** After identification of the main representative and comprehensive standards, the emerging results indicate that standards and certifications in healthcare could be an essential element of healthcare's business strategy. Indeed, they guide and conduct the healthcare facilities, wishing to introduce CE within their sustainability performances, translating into circular benefits for the facilities, patients, and families. Certifications and standards allow cost and investment reduction, and also sustainability policy focused on waste-zero and eco processes among care facilities.

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### *The third migration flow in Albania: the trust state and Covid-19*

*JEL Classification:* A11; A14; B16

*Keywords:* trust state; migration flow; Covid-19 pandemic; quantitative approach

#### ABSTRACT

**Research background:** Scholars have shown that low trust state is associated with migration flow. Since 1990, Albania appears to be going through its third significant migratory wave. According to a UN report, 1.2 million Albanian residents fled the nation between 1990 and 2020. One of the major determinants influencing a citizen's decision to migrate seems to be their level of trust towards the state. On the other hand, it appears that the government's response to the Covid-19 pandemic reduced Albanian individuals' trust in the government and public institutions.

**Purpose of the article:** The main goal of the study is to test (I) Whether there is an association between trust state with the waves of migration flow in Albania; and (II) In what extend the government's response to the Covid-19 pandemic affected the trust state among Albanian citizens. The trust state will be measured using the following metrics: (i) unemployment rate, (ii) corruption, and (iii) trust in public institutions.

**Methods:** The quantitative research design running a multiple linear regression allows to identify the relationship that exists between (I) the main determinants of trust state and migration (II) the response to Covid-19 pandemic by the government and the trust state, while controlling for the socio-economic and educational backgrounds of Albanian citizens (income vs. education level). The study employs a study case method with a strong analytical and explanatory framework. The study will be separated into two stages. The first stage of the analysis involves secondary data on the three main determinants of the trust state and, migration flow in Albania from 1990–2020. The second stage of the analysis will use primary data gathered in the framework of the recent study.

**Findings & value added:** The study focuses on the trust state impact on Albania's migratory flow before and after the Covid-19 pandemic. In the end, empirical results will be used to determine whether the second stage of the study supports the first stage. This seems to be the first study in this regard for the Albanian case.

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### *Rethinking the fiscal policy in post Covid-19 times in Mexico*

*JEL Classification:* E2; E5; H2

*Keywords:* job creations; pandemic; economic inclusion; modern money theory; government expenditure

#### ABSTRACT

**Research background:** The global economy has experienced one of the most economic and financial crisis in almost 90 years. The Real Gross Domestic Product (GDP) of both developed and emerging economies are shrank by -5.8% and -3.3% respectively caused by the Covid-19 pandemic (IMF: 2020). The Covid pandemic crisis has led a severe economic stagnation throughout the world but also to the Mexican economy, two million of jobs have been lost, and the (GDP) shrank 8.2% in 2020 and countless people have been plunged back into extreme poverty. For many economists, the Covid-19 could lead to a lost decade for development. Mexico's fiscal space has not been effective in reducing the negative effects mentioned above.

**Purpose of the article:** The main purpose of this paper is to rethink the Mexican fiscal policy through the MMT as an important tool to creating and maintaining prosperity.

**Methods:** this research is mainly focus on documents about the descriptive statistical characteristics. Some cited documents on the Modern Money Theory from high impact factor journals will be considered. Data and information providing by international organizations such as the International Monetary Fund, World Bank to name a few will play a crucial role in this research.

**Findings & value added:** Following the negative effects and consequences of Covid-19 on the Mexican economy, this research found that the Modern Money Theory (MMT) is useful as a government policy in post Covid-19. Furthermore, the MMT is a direct response to the pandemic by boosting the aggregate demand and job creation in the Mexican economy. In addition, the MMT can also mitigate the resulting tension between the impact of external shock caused by the pandemic and product-market demand.

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*Informal, social or personal relationships: clearing the fog of semantic voluntarism*

*JEL Classification:* L250; D230

*Keywords:* informal relationships; institutional relationships; internationalization; personal relationships; social relationships

ABSTRACT

**Research background:** The relationships established by a company with different entities play important role in company's internationalization process. These relationships can be of a different nature based on the degree of their formality. Although strict formal relationships are easy to be identified, all the other types are often mistakenly put in one bag and therefore analyzed in an incorrect way, often providing misleading results.

**Purpose of the article:** To distinguish different types of informal relationships in company's internationalization process.

**Methods:** The two-step literature review including deductive analysis of representative examples of types of relationship and synthesis of the processed material.

**Findings & value added:** Results presented in the paper enabled to draw a clear line between three different terms, namely: 'informal,' 'social,' and 'personal relationships' which are often incorrectly used as the same term.

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### ***Inability to face unexpected expenses and monetary poverty in Poland: are these two faces on the same coin?***

*JEL Classification:* I32; C25

*Keywords:* material deprivation; monetary poverty; multinomial logit model

#### ABSTRACT

**Research background:** A growing literature in recent years has focused on the various forms of household deprivation. In this paper, the analysis of deprivation was conducted on the basis of two symptoms: 1) households' declarations about their inability to face unexpected financial expenses (in the amount corresponding to the monthly value of the relative poverty line adopted in the given country), 2) household monetary poverty understood as achieving incomes below the value of the relative poverty line. Due to the similar definitions of the two symptoms, it seems that households exhibiting one of them also exhibit the other. However, it was found that there are significantly more households unable to cope with unexpected expenses than households that are monetary poor.

**Purpose of the article:** The aim of the article is to identify the characteristics of households subject to each of the indicated symptoms of financial deprivation (either the first or the second) and households showing both symptoms using econometric methods.

**Methods:** The paper is based on the latest data from the EU Statistics on Income and Living Conditions (EU-SILC) survey conducted in 2020. The methods of qualitative variables analysis — multinomial logit models — were applied.

**Findings & value added:** The quantitative analysis of financial deprivation among Poles revealed the extremely difficult situation of households with disabled people, unemployed people, and households with at least three children. The analysis provided in-depth information on the phenomenon under study.

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### *Ensemble modeling of financial distress of Slovak companies*

*JEL Classification:* C38; G33

*Keywords:* ensemble; prediction model; financial ratios; financial distress; Slovak companies

#### ABSTRACT

**Research background:** Financial distress prediction has been a widely discussed topic for several decades. Early detection of impending financial problems of the company is important for all entities involved in the company's business activities. In this way, it is possible to take the necessary actions in the management of the company and thus eliminate possible undesirable consequences of these problems.

**Purpose of the article:** The main goal of the paper is to identify significant predictors for modelling financial distress and create an ensemble model combining different types of models, such as decision trees and neural networks. This model is created using real data on Slovak companies. Compared to foreign models, this model could serve as an autonomous and universal tool in the Slovak economic conditions.

**Methods:** The model is created using a dataset consisting of the values of more than 20 financial ratios of more than 19 thousand real Slovak companies. Partial models are created by various machine learning algorithms, e.g., decision trees and neural networks. All models are compared based on a wide range of selected performance metrics, and by combining them, the final model is created. During this process, we strictly use a data mining methodology, CRISP-DM.

**Findings & value added:** The results indicate the suitability of ensemble modelling in predicting financial distress. The final model achieved an overall predictive ability of nearly 90 per cent. It is designed for use in all industries of the Slovak economy but can also be used for companies in another country.

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### *Do corporate reputation and social media affect the sustainability of SMEs?*

*JEL Classification:* L26; L14; O44; Q56

*Keywords:* small and medium-sized enterprises; reputation; social media; sustainability; V4 countries

#### ABSTRACT

**Research background:** Small and medium-sized enterprises (SMEs) play a fundamental role in countries' economies. Currently, entrepreneurs are struggling not only with the uncertainty of the business environment but also with high expectations for businesses to be run in a sustainable way. Therefore, the impact of reputation and social media on sustainability is an area of interest for entrepreneurs.

**Purpose of the article:** This article defines, quantifies and verifies the effects of reputation and social media on the sustainable development of SMEs in the V4 countries.

**Methods:** Data was gathered using the CAWI method. The survey was designed based on a literature review and experts' opinions. Respondents (owners/top managers of SMEs, n=1090) were asked questions on their firms' characteristics, e-reputation, social media usage and sustainable development. Linear regression modelling was utilised for the evaluation of the hypothesis.

**Findings & value added:** The study revealed a strong relationship between owners' and top managers' perceptions of the importance of both corporate reputation and sustainable development. The belief that social media supports the growth of companies' performance is related to the declaration of understanding of the concept of sustainable business development. Social media is perceived as a key aspect of entrepreneurship and plays an important role in sustainable business growth.



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### *Effect of selected determinants on the sustainability of SMEs: gender perspective*

*JEL Classification:* L21; L26; M21; C36

*Keywords:* empirical research; effect; SMEs; sustainability; V4 countries

#### ABSTRACT

**Research background:** Crisis events in business bring many changes for owners and managers of SMEs at the moment. The subject of investigation were the following determinants: crisis events in business, level of digitalisation, financial management, environmental aspects of entrepreneurship, business ethics and so on.

**Purpose of the article:** The aim of this article is verification of differences perception of the effect of selected determinants on the sustainability according to the gender of owners or top managers of SMEs.

**Methods:** Case study was realised on the base of 1,398 attitudes of owners or top manager in V4 countries. Questionnaire contains 52 questions. Data collection was realised external agency with using CAWI methodology. The statistical hypotheses were verified with applying PLS-SEM.

**Findings & value added:** Empirical findings are important for many authors and researchers. Environmental aspects of entrepreneurship are the most important factor which has a strong positive impact on the sustainability of SMEs. Environmental aspect of entrepreneurship is the most important factor which has a strong positive impact on the sustainability of SMEs. Gender disparity are important by evaluation of the financial management, level of digitalisation a firm, human resource management and business ethics, and their effect on the sustainability of SMEs.

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### *Savings natural resource funds and the development of resource-rich countries*

*JEL Classification: F21; O11; O23; Q32; Q38*

*Keywords: natural resource funds; savings funds; resource curse; economic development; resource rich countries*

#### ABSTRACT

**Research background:** Countries rich in natural resources are achieving worse results of economic development compared to the ones which resources are negligible. This phenomenon is known as the resource curse and occurs commonly worldwide. In order to solve the problem of resource curse an explicit fiscal tool, natural resource funds, was proposed. However, studies on the role of resource funds for development of countries rich in natural resources conducted so far delivered mixed and inconclusive results. Especially the role of savings funds, which are one specific type of natural resource funds, remains vague.

**Purpose of the article:** Aim of the study is to identify the role of savings natural resource funds for the development of countries rich in natural resources.

**Methods:** In order to achieve aim of the study an extensive literature review was undertaken. Qualitative, conceptual and comparative assessment of savings funds was also engaged.

**Findings & value added:** The main contribution of this study is introducing savings fund specific concept. The conducted study shows that savings fund could increase long-term public savings and long-term state investment in resource rich countries. Additionally they enable diversification of the economy by changing countries' rich in natural resources role in international market from an exporter of resources to an exporter of financial capital. The study also shows that functioning of savings funds in developed and developing countries is different. Study confirms that savings fund is an important economic policy measure used in order to counteract resource curse.

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### *Dual Circulation Strategy (DCS) and its impact on Chinese economy's international competitiveness*

*JEL Classification:* F14; F63; O11

*Keywords:* Dual Circulation Strategy (DCS); China; international trade competitiveness; revealed comparative advantages

#### ABSTRACT

**Research background:** China aims to achieve a 70% share of domestic production in technology sectors by 2025, as well as to reduce its dependence on external supply chains to make China a leading player in the semiconductor market in all areas of the supply chain. This objective is highly ambitious, and even if it is not achieved in its entirety, the direction outlined provides an opportunity for not only domestic but also international development of the Chinese economy, something Beijing is very keen on. In the case of the latter, a further significant improvement in the Chinese economy's international trade competitiveness is expected, especially in the area of high-tech goods.

**Purpose of the article:** The aim of the paper is to evaluate the objectives of China's Dual Circulation Strategy (DCS) and their potential impact on the international competitiveness of Chinese economy in the context of Economy 4.0. In particular, the paper will seek to answer the question whether and to what extent the implementation of DCS, including in particular the objective of dynamic development of Chinese technology companies, can lead to the improvement of the country's international trade competitiveness, as well as to identify the internal and external determinants of this process.

**Methods:** Out of various assessment methods of international trade competitiveness of economies in use, the traditional and commonly applied original logarithmic formula of Balassa's Revealed Comparative Advantages (RCAs) will be applied for the purposes of this analysis. The period of analysis will cover 2010–2021, and all necessary data will be derived from the United Nations Commodity Trade Statistics Database.

**Findings & value added:** The paper will attempt to verify the research hypothesis that China has been consistently increasing its economy's international competitiveness in the trade of high-tech goods for many years now, and as a consequence of DCS, this trend is likely to be sustained or even intensified.

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### *Contemporary paradigms and concepts of small town development*

*JEL Classification:* O21; Q01; R51; R58

*Keywords:* small town; city development concept; smart city; slow city; green city

#### ABSTRACT

**Research background:** The paradigms of sustainable development and knowledge and innovation-based economy (smart growth) are among the most important signposts for the development of contemporary towns, cities and regions. The growing competitiveness of cities and the high variation and complexity of the urban environment necessitate the search for such a model of a city that will enable its dynamic development in the economic, social and spatial spheres. The implemented development model determines the town's ability to face the current challenges, such as population changes, increasing and diverse needs of the city's users, limited natural resources which therefore require protection, a shift in the paradigm of local economy towards circular economy, thereby improving the town's ability to deal with crisis (urban resilience). As a consequence, there is a growing number of smart cities as well as cities which have adopted another dominant development concept, such as green cities, compact cities, slow cities.

**Purpose of the article:** is to describe and compare the main theoretical concepts and models of the development of cities which are incorporated in development policies of small cities.

**Methods:** A critical perusal of the literature and an analysis of the source documents (national, regional strategies and the EU agendas) were carried out.

**Findings & value added:** The diverse and increasingly varied conditions underlying the development of small towns mean that a local development policy should have a more reactive and scenario-like character. The process of evolution of the existing approaches can be observed, resulting in the hybridization of the development models, where new concepts arise by combining the assumptions of several approaches, for example a smart green city, etc. This process can be seen as the manifestation of improving the level of urban resilience to crises, which increases the chance of small towns to adapt to new conditions.

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### *Forecasting volatility during the outbreak of Russian invasion of Ukraine: application to commodities, stock indices, currencies, and cryptocurrencies*

*JEL Classification: G170*

*Keywords: invasion of Ukraine; war; volatility models; high-low range; robust estimation*

#### ABSTRACT

**Research background:** The Russian invasion on Ukraine of February 24, 2022 sharply raised the volatility in commodity and financial markets. This had the adverse effect on the accuracy of volatility forecasts. The scale of negative effects of war was, however, market-specific and some markets exhibited a strong tendency to return to usual levels in a short time.

**Purpose of the article:** We study the volatility shocks caused by the war. Our focus is on the markets highly exposed to the effects of this conflict: the stock, currency, cryptocurrency, gold, wheat and crude oil markets. We evaluate the forecasting accuracy of volatility models during the first stage of the war and analyze the methods that have the potential to mitigate the effect of forecast deterioration.

**Methods:** We use the robust methods of estimation and a modified Range-GARCH model which is based on opening, low, high and closing prices. We compare them with the standard maximum likelihood method of the classic GARCH model. Moreover, we employ the MCS (Model Confidence Set) procedure to create the set of superior models.

**Findings & value added:** Analyzing the market specificity during this conflict, we discover the individual nature of the cryptocurrency markets, where the reaction to the outbreak of the war was very limited and the accuracy of forecasts remained at a similar level before and after the beginning of the war. Our findings regarding the suitability of methods in the wartime reveal that the Range-GARCH model compares favourably with the standard volatility models, even when the latter are evaluated in a robust way. It shows that in this period gains from using more market information outweigh the benefits of using robust estimators.

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### ***Competitive potential of Polish enterprises in the period 2013–2022: results of the Company Competitiveness Barometer***

*JEL Classification: M21; L10; L20*

*Keywords: company competitiveness; competitive potential; Company Competitiveness Barometer*

#### ABSTRACT

**Research background:** The concept of competitiveness is used to define the ratio of enterprises to competitors and results from many internal features and the ability to deal with an external environment. One of the elements of competitiveness is competitive potential which means all resources and capabilities which a company has at its disposal. The competitive potential consists of several parts, such as human capital, financial capital, machines, procedures etc. However, during the last 10 years the environment of companies has changed dramatically. So, there is a research problem to solve, how the elements of competitive potential have changed over this period.

**Purpose of the article:** The purpose of this paper is to present results of the research of Polish companies in the period of 2013–2022 and solve a research problem, if the last breakthrough events which we can see since 2020 influenced on main aspects of competitive potential. This method of the research is the Company Competitiveness Barometer conducted in more than 2000 Polish companies in the Silesian Region during last 10 years.

**Methods:** The questionnaire used in the Company Competitiveness Barometer contains 48 questions. 12 of them are related to the characteristics of the company that are affecting competitive potential. The questionnaire can be found on [www.sensorium24.com](http://www.sensorium24.com).

**Findings & value added:** The papers presents results of the Company Competitiveness Barometer 2020 made in Polish companies in the Silesian Region in the period of last 10 years. Added value is the result of the competitive potential research in perspective of unexpected changes of business environment since 2020.

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***The influence of social-economic indicators on immigration to Spain***

*JEL Classification:* F22; O15; C01

*Keywords:* immigration; econometrics; Spain; employment; social-economics indicators

**ABSTRACT**

**Research background:** Overall, the number of immigrants has increased over the past five decades and about 3.6% of the world's population are immigrants. In order to achieve well-designed immigration and foreign policy solutions, it is important to identify the driving factors that drive people to migrate.

**Purpose of the article:** to predict the future dynamic of immigration in Spain for 2022–2026 under the influence of factors that cause the choice of the country of destination, that is, which attract a person to the country, or, on the contrary, the country remains out of choice.

**Methods:** regression modeling using R-Studio software based on a dataset for the period from 2000 to 2021. As a scientific hypothesis, we assume that among a large number of possible factors, the following might have an impact on immigration to Spain: government spending on social protection, inflation, employment of the population, the share of the ICT sector in the country's GDP, the level of education, as well as two qualitative factors that attracted a significant number of immigrants (the economic crisis in the USA for 2007, and the presence of open borders for the African population in 2019, which other European countries did not provide).

**Findings & value added:** There is a nonlinear negative influence of spending on social protection (as a logarithm) and the level of inflation (in the third degree), but a positive influence of employment (in the third degree). In addition, the forecasting of immigration in Spain under the influence of the factors discussed above was presented. The research will be interesting for the government from an economic point of view because migration processes are important not only when considering the country's demography, they directly affect the national economy, which in turn can strengthen or, on the contrary, weaken the country's economic growth.

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### *Development of the imperfect competition measurement index in the banking market*

*JEL Classification: D60; G18*

*Keywords: banking market; deadweight loss; Herfindahl–Hirschman Index; market regulation; monopolization*

#### ABSTRACT

**Research background:** Imperfect competition is measured by many different indices reflecting the level of monopoly power in the chosen market: (a) structural measurement approaches focusing on the elements of market structure, which measures the impact of centralization on competitiveness and (b) non-structural measurement approaches, which are based on the New Empirical Industrial Organisation theory. Researchers and practitioners in the banking market have chosen to use two indices in most cases — Herfindahl–Hirshman index and Concentration ratio, which are classified as structural measurement approaches. However, these indices tend to overestimate the monopoly power in smaller countries. These overestimates influence the further assessment of the deadweight loss and relevant policy measures to minimize the deadweight loss in the banking market.

**Purpose of the article:** In order to get a better assessment of the monopoly power in the banking market the combined Imperfect Competition Measurement Index has been developed and presented in the article.

**Methods:** literature analysis, regression analysis, mathematical analysis.

**Findings & value added:** the combined Imperfect Competition Measurement Index shows a more precise assessment of the monopoly power in smaller countries. These results can be used (a) to get a better understanding of changes in various banking markets in different countries over time, (b) to calculate the deadweight loss arising from the imperfect competition more precisely and (c) to draw appropriate policy measures aimed at minimizing the deadweight loss.



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### *Are the solvency ratios of the Spanish banking system adequate: a quantitative analysis*

*JEL Classification:* B26; G21; G17; C51; C52

*Keywords:* banks; Spain; solvency; profitability; SEM

#### ABSTRACT

**Research background:** This article was based on an analysis regarding the Spanish banking system. It was based on official and private data studied during the last 30 years, from December 31st, 1992 to December 31st, 2021. This research formulates three hypothesis which suppose certain weaknesses in the system's solvency. This situation would represent a problem — which is not spoken of, or written about — to confront the more frequent economic crisis that are rising.

**Purpose of the article:** The general objective of this research is to determine the real solvency of the Spanish banking system. One of the first specific objectives is to demonstrate that macroeconomic aspects had a significant impact on the Spanish banking system, specially on capital solvency and profitability. Another specific objective lies in demonstrating that the technical requirement of the solvency ratio should be gradually increased.

**Methods:** Two different methods have been employed: the first one was the financial and economic banking analysis. The second method used was the structural equation model (SEM), in the Path Analysis modality, which a statistical model was designed specifically for this research. Nine variables were included, four exogenous and five endogenous. The exogenous variables were: GDP, IBEX 35 (the Spanish stock exchange index), Risk premium, and Financial depth. The endogenous variables were: Portfolio/Total Assets, Deposits/Equity and Total Liabilities, Equity/Total Assets, ROA, and ROE.

**Findings & value added:** The results obtained in the designed model — CMIN, FMIN, CFI, RMSEA — are accepted, and are used to test the research hypotheses proposed. Likewise, according to the simulations carried out, the solvency ratio of 8%, recommended by the Basel Accords, should gradually increase to 12%. This would permit the system to better face new crisis scenarios. Finally, it can be stated that this increase in solvency has a positive impact on the banking system profitability.

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### *Portfolio optimization theory: estimation of the covariance matrix for high-dimensional data*

*JEL Classification:* G11; G17; G24

*Keywords:* portfolio optimization; covariance matrix; singular value decomposition; Stein-type shrinkage estimator; Choleski factorization; US Mid-cap

#### ABSTRACT

**Research background:** An estimation of the covariance matrix is of critical importance in the modern portfolio optimization theory. The riskiness of the portfolio is defined through variances and covariances of individual asset returns. A high-dimensional portfolio is prone to cause an instability in estimated variances and covariances. The instability in the sample covariance matrix can be detected in the large dispersion of its eigenvalues. The large eigenvalues can be smoothed out by using the Stein-type shrinkage estimator and more stable covariance matrix re-estimated which could lead to a better performing portfolio.

**Purpose of the article:** The main objective is to investigate an impact of the Stein-type shrinkage estimator on the sample covariance matrix and, consequently, on the estimated portfolio's weights. The evaluation of the shrinkage estimator is carried out on the observed data so it can be used as a potential portfolio strategy in practice.

**Methods:** We use an adjusted Stein-type shrinkage estimator to smooth out the eigenvalues. The adjustment is applied such that the shrank eigenvalues are kept positive and in the decreasing order, which preserve the re-calculated sample covariance matrix positive definitive and the order of the original eigenvalues, respectively. Also, we apply the adjusted shrinkage to a vector of values that is obtained from the Choleski factorization and re-construct the sample covariance matrix accordingly.

**Findings & value added:** We show a portfolio optimization with three different covariance matrices and its impact on the estimated portfolio's weights. We use asset returns for the portfolio US mid-capitalized companies observed on weekly basis between 2017 and 2021. The application of the estimated weights on the one-year-ahead portfolio shows that the sample covariance and the shrank covariance matrix attain similar portfolio's utility results.

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***A measure that really works: impact evaluation of the Contribution for self-employment as a tool of active labour market policy in Slovakia***

*JEL Classification:* J18; J68

*Keywords:* unemployment; Contribution for self-employment; active labour market policy; impact evaluation; propensity score matching

ABSTRACT

**Research background:** Unemployment is definitely a problem that needs to be solved, not only in developing countries but also in economically blind countries. One of the ways in which unemployment can be solved is through the tools of active labour market policy. In this article, we focus on evaluating the Contribution for self-employment provided in the Slovak Republic under the Act on Employment Services No. 5/2004 Coll. This allowance is provided voluntarily to unemployed jobseekers and is used to partially cover the costs related to starting a business.

**Purpose of the article:** The main aim of this article is to determine the impact of the Contribution for self-employment on the employment of its participants and, thus, to quantify the effectiveness of the measure for decreasing unemployment in Slovakia.

**Methods:** The evaluation of the impact of the Contribution for self-employment is carried out by a counterfactual impact evaluation approach. The impact evaluation is done by propensity score matching, whereas logistic regression is used for estimating the propensity score. In the evaluation, we work with the database of registered jobseekers, which is administered by the Central Labour Office of Social Affairs and Family in Slovakia.

**Findings & value added:** The results indicate a positive effect of the intervention Contribution for self-employment on its participants' employment compared to individuals who did not participate in the intervention. Thus, we can consider this intervention useful also as a measure for supporting business in Slovakia.

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*The relationship between income and subjective well-being of European households in post-Covid environment: income source approach*

*JEL Classification: D31; J31; I31*

*Keywords: income level; income source; subjective well-being*

ABSTRACT

**Research background:** The relationship between income level and subjective well-being is puzzling. Although many researchers proved that increasing income does not necessarily guarantee higher subjective well-being, they neither have a uniform explanation of this issue nor evidence how this phenomenon developed in the post-Covid environment. Therefore, the present article has focused on the relationship of subjective well-being and the source of income in post-Covid environment, emphasizing currently growing self-employment.

**Purpose of the article:** to evaluate how subjective well-being of Europeans is shaped by the income level and sources of income in the post-Covid context.

**Methods:** The article used the European Social Survey data of the Round 10 — 2020 from 25 European countries. This data was employed for measuring subjective well-being, income level and income sources of private households, with a total sample size exceeding 30 000 respondents. Authors hypothesized that the main income source of a household is related to the subjective well-being of members of this household and that it also mediates the relationship between income level and subjective well-being.

A combination of rank correlation, general linear model, and binary regression analyses were used to test the research questions associated with this study.

**Findings & value added:** The results of this research complement the existing scientific insights into the relationship between income and subjective well-being by adding aspect of the source of income, and post-Covid context. The findings show that the level of income have not ensured higher subjective well-being among European households in the post-Covid period. It was tested that this relationship is stronger in the lower income households. Similar results were observed across the household groups by the main income source, except households with dominating income from self-employment. Self-employed people tend to be more satisfied despite their income level.

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### *Post global financial crisis multiplex financial network structure longevity: a pattern of re-globalization?*

*JEL Classification:* F650; G010

*Keywords:* multiplex financial network; structure longevity; global financial crisis; re-globalization

#### ABSTRACT

**Research background:** International capital flows show a decreasing trend after each financial crisis as countries became unwilling to invest in risky counterparties. Recent discussions over structural changes within the global financial network suggest that its structure may be still undergoing some changes. Uncovered weaknesses of over connectedness with unstable unally countries during global financial crisis (GFC) were further highlighted by recent Covid-19 pandemic. However, previous research revealed that important structural changes happened after the GFC. Thus, such a situation raises a question whether post GFC multiplex network structure is long-term and is it exhibiting re-globalization pattern.

**Purpose of the article:** is to assess post GFC financial multiplex network longevity and to identify whether it exhibits re-globalization pattern.

**Methods:** Multiplex financial network mapping and network topological analysis methods were employed to evaluate the structural properties of international financial connectedness and their longevity. Five layers of multiplex financial network were mapped for different types of capital flows: net direct and portfolio investments in debt, equity and net banking assets for each year in the post GFC period 2009–2020. Each network layer employed bilateral data from 234 countries of the world. Next step of research employed a set of network-level and country-level measures defining the topological features of each network in the period of 2009–2020 in order to capture the trend of structural changes and evidence of re-globalization.

**Findings & value added:** Results of the research revealed that structural properties of international financial connectedness not only remain but become stronger over time. However, the country-level research revealed that the influence of most central and connected countries tends to decrease, while influence of least central and connected countries is increasing. This structural pattern observed after GFC is continuing thus proving its longevity. Such empirical results support the re-globalization megatrend as highlighted by most recent scientific discussion showing that it started early after GFC and was being strengthened by European sovereign debt crisis and Covid-19 pandemic. There also some evidence, that developed countries have shifted away their financial relations from less developed, non-ally countries increasing their regional presence, while less developed countries also increase their financial presence regionally. Further studies could explore further regional shifts in international capital flows.

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***Assessment of public education expenditure efficiency across Lithuanian municipalities***

*JEL Classification: D61; H75; I22*

*Keywords: public expenditure efficiency; expenditure on education; municipal finances*

**ABSTRACT**

**Research background:** Expenditure on education tends to increase, yet this does not necessarily guarantee high quality of education services. Efficiency of public education is the ability to maximize the educational achievement given the resources invested. Previous research in this area mostly focused on the country data analysis; however, it is equally relevant to understand what is the public education expenditure efficiency and its determinants across municipalities of a single country, especially taking into account differences in their sociodemographic and economic characteristics.

**Purpose of the article:** is to assess public education expenditure efficiency of Lithuanian municipalities and to identify whether and which factors explain efficiency variations among the municipalities.

**Methods:** The article used 2013–2019 data from 60 Lithuanian municipalities, further clustered into: big cities, resort, rural and other municipalities. COLS method was employed for public education expenditure efficiency assessment and OLS regression analysis — to determine its influencing factors. Passing ratio of Lithuanian language and math exams were used as efficiency outputs. Inputs included financial (state level expenditure for education and maintenance) and nonfinancial (composition of teachers, occupied area, etc.) variables. Other variables were municipality own financing, population density and sub-indexes of Quality of Life Index.

**Findings & value added:** Results of the research are ambiguous. When assessed by the overall passing of the exams, the efficiency scored 86–90%. But when evaluated by passing the exams with the highest scores, it did not even reach 40%. Similar results were observed across the clusters and, differently from the public opinion, big cities didn't demonstrate the highest efficiency. Two factors were identified as the most influential — municipality own financing with the positive and state level expenditure for education with the negative influence on the efficiency. Such results support the decentralization of public education expenditure management and call for the alternative output measures in Lithuanian public education system.

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***Study of social benefits to the unemployed recipients in the general context of unemployment and social support: the case of Lithuania***

*JEL Classification:* J24; J64

*Keywords:* unemployed; recipients of social benefits; social support policy in Lithuania

ABSTRACT

**Research background:** The number of social benefits to the recipients registered as unemployed at the Employment Service in 2017–2020 decreased from 26.4 thousand to 8.3 thousand. 2020 appeared to be exceptional, since after one-time and temporary benefits had been paid, the income of families increased and therefore, a large part of them lost the right to social benefits. The article uses statistical data of the pre-pandemic year 2019. The average annual number of registered vacancies in 2019 was only 8.5 thousand. Thus, 1.5 unemployed people who received social benefits or 17 of all the registered unemployed people had to apply for one job. The unemployed, registered to receive social benefits, accounted for 1.5 % of the labor force (in 2019, the labor force was 1447.4 thousand), therefore, there is a growing need to investigate the reasons for the inactivity of unemployed recipients of social benefits in the labor market and to provide employers and the Employment Service of the Republic of Lithuania with measures to eliminate these reasons.

**Purpose of the article:** to investigate the reasons for the unemployment of the unemployed recipients of social benefits and to offer the most effective means of employment of the unemployed recipients of social benefits in the labor market.

**Methods:** Analysis of scientific literature, survey of the unemployed on social assistance, analysis of statistical data.

**Findings & value added:** The unemployed recipients of social benefits constitute an insignificant part of the total labor force (1.5%) and a small part of all registered unemployed (14.5%), so their role in the labor market is small. The number of the registered unemployed receiving social benefits is more significant not for the labor market, but for the social support system. The survey research revealed the reasons for the unemployment of the recipients receiving social benefits. The most significant of them are that there are no jobs in the residential area, and to work elsewhere one faces transport problems; health problems, inadequate qualifications, insufficient salary to live on, debts due to which a large part of the future salary is deducted by bailiffs and/or age discrimination in the labor market. Each of these reasons was cited by more than 30% respondents.

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*The significance of investigation of the relationships between road transport indicators and expenditure of visitors in the context of countries' competitiveness development*

*JEL Classification: L83; M1; O1*

*Keywords: road transport; expenditure of tourism visitors; transport indicators; competitiveness of countries*

ABSTRACT

**Research background:** Transport represents a dynamic element in the tourism system. In the recent decades, transport has been a subject of research mainly from a point of view of the sustainability of the economic systems and the environmental aspects.

**Purpose of the article:** The aim of this study was to quantify the relationships between the selected indicators of road transport development and the expenditure of tourism visitors in the selected European countries in the context of the development of their competitiveness.

**Methods:** The road transport indicators were applied in the research trajectories: density of road (DNST), share of road infrastructure investment (SH INF), share of motorways (SH MWY), and indicators of visitor expenditure for business (BTS), leisure (LTS), domestic (DTS) and foreign (VEFS) tourism. In the first phase of the analyses, the countries of the European part of the OECD (N = 27; period of 2010–2018) were divided into the two clusters based on the development index (HDI) and the innovation index (GII) through the cluster analysis. The two groups were created – more and less developed countries. The results of the analysis of differences declare the fact that there are the differences between these groups in the DNST, SH INF, BTS, LTS, DTS indicators. The correlation and regression analysis methods were applied in order to quantify the relationships between the variables.

**Findings & value added:** The difference between the groups of the countries was also shown in the relationships between the road transport development indicators and visitor spending. In more developed countries, the relationship between the traffic indicators on BTS and DTS was significant. In less developed countries, the significant relationships were identified with LST and VEFS.



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### *Examining herding behavior in the cryptocurrency market*

*JEL Classification:* G40;C58;G01;C21

*Keywords:* cryptocurrency market; herd behavior; market-wide approach; cross-sectional absolute deviation

#### ABSTRACT

**Research background:** Cross Sectional Absolute Deviation of returns (CSAD) which is an extension of the Cross Sectional Standard Deviation of returns (CSSD) proposed by Christie and Huang (1995).

**Purpose of the article:** In this paper, the main focus of the empirical analysis is the detection of market wide herding behavior (Henker et al 2006) in the cryptocurrency market for the period 1/1/2016 to 2/1/2019 compared to 1/1/2019–1/7/2022. The time-frame chosen for comparison was set to assess if herding behaviour in this market has changed during its rapid growth and stagnation period that it currently faces

**Methods:** Cross Sectional Absolute Deviation (CSAD) approach proposed by Chiang and Zheng (2010) was used to detect herding and the addition of dummy variables to detect in what type of market movement herding is detected. Herding is detected when dispersion decreases or at least rises at a less-than proportional rate with the return of the market, implying a negative relationship between market return and dispersion in the presence of herding behavior. The estimation of CSAD was also made using quantile regression as it covers more quantiles and allows detection of herding related to the magnitude of returns. For further analysis on the behavior of investors Bitcoin was set as an example to understand the reaction of investors to bubbles using HP (Hodrik–Prescott) Filter.

**Findings & value added:** Results show evidence of herding in down-market movement and at higher returns before 2019. After 2019 herding is detected during upper market movement and at medium-higher returns. In this paper, there is evidence of herding occurring whenever a bubble bursts in case of Bitcoin.

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### *Examining the volatility of cryptocurrencies during the Covid-19 pandemic*

*JEL Classification:* G15; C58; G17; G01

*Keywords:* cryptocurrency volatility; digital currency; covid-19 pandemic; GARCH

#### ABSTRACT

**Research background:** The cryptocurrency market is highly motivated by expectations of non-professional traders that can easily lead to serious bubble behaviour of BTC and increase the volatility (Bouoiyour et al., 2015). The increase in the number of studies analysing the price and volatility of cryptocurrencies has increased and GARCH models have been vastly used in estimating the time-varying volatility of cryptocurrencies

**Purpose of the article:** This paper aimed to use various GARCH models to examine the volatility of top 8 cryptocurrencies during the Covid-19 pandemic and identify if leverage effect is present but also if past price fluctuations or special price fluctuations impact remain in the forecast of the variance.

**Methods:** TARCH and EARCH models were examined to understand the leverage effect presence and presence of asymmetry in this market during the selected data-frame

**Findings & value added:** Results show that for ADA, BTC, ETH and CC8 similar results of limited influence of past price fluctuations, with leverage effect presence due to special price fluctuations but not on the rates of returns. This may indicate that for these cryptocurrencies, results are also stronger as the market return presented similar results, and the investors in this market are more reactive to price fluctuations. Different results for USDT and USDC were expected as they are stablecoins and are pegged to the US Dollar. BNB and LUNA1 which are tokens for their specific platforms obtained different results, which is a reflection of the reaction of their investors.

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***Image of the city brands in the opinion of their inhabitants: linear ordering of European capitals using TOPSIS method***

*JEL Classification: M31; R58*

*Keywords: city brand; European capitals; linear ordering; topsis method*

ABSTRACT

**Research background:** Cities increasingly compete for attracting investors, companies, tourists and new citizens. To attract target audiences, and to differentiate one city from another, city marketers focus on establishing the city as a brand. City branding is a growing academic field and a popular practice. Among the main benefits generated for a city by its strong brand the pride of citizens is indicated. One of the most important goals of city branding is therefore to build a positive brand among its inhabitants.

**Purpose of the article:** The aim of the paper is to develop a ranking of cities (capitals of European countries) based on the criterion of the city's brand image among its inhabitants.

**Methods:** The paper presents the application of a Multi-Criteria Decision Making (MCDM) method for the ranking of European capitals cities. During the construction of the MCDM techniques, the importance of the decision-making approach for the linear ordering of 28 European capitals cities is presented. The Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) is used for evaluation. This method allowed compilation for a final ranking, taking into account publicly available indicators of the perception of particular dimensions of the city's brand by its inhabitants.

**Findings & value added:** The top five positions in the ranking are occupied by the following cities: Bruxelles, Sofia, Berlin, Oslo and Bratislava. Ljubljana, Praha and Lisboa were lowest ranked.

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### *Project management of the implementation of a cost accounting standard in Polish hospitals*

*JEL Classification: I11; I19; K23*

*Keywords: hospital; cost accounting; project management*

#### ABSTRACT

**Research background:** The main source of the health system's problems is primarily the limited financial resources available within the system, but its efficiency is also affected by the not fully effective management of these resources. A solution to support management processes in terms of financial management is the introduced Regulation of the Minister of Health of 26 October 2020 on recommendations on the standard of cost accounting at healthcare providers. Proper implementation of this recommendation is a challenge for healthcare entities in Poland.

**Purpose of the article:** The aim of the article is to identify key success factors related to the management of the project to implement a cost accounting standard in hospitals in Poland. A properly implemented standard is to enable support of management processes and proper financial management in the health care system at the macro level, as well as at the level of the medical entity. The first period of functioning of these regulations is an opportunity to carry out a summary in this respect. The main determinants in this area include the level of staff education, the quality of the IT system, the use of expert knowledge, training support, and the relationship between medical staff and administrative staff.

**Methods:** The research was conducted by using a survey questionnaire. On the basis of the questionnaire survey in 52 hospitals in Poland, statistical analysis was performed using basic descriptive statistics and regression analysis, which enabled the identification of key success factors for the management of the project to implement the cost accounting standard.

**Findings & value added:** On the basis of the analyses carried out, recommendations were made on the principles of implementing the cost accounting standard in hospitals and the directions for its effective use in management processes in the future.

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### *Developing study on program success*

*JEL Classification: H43; H53; I38*

*Keywords: program success; bibliometric analysis; program management; social sciences*

#### ABSTRACT

**Research background:** A significant body of research is related to project management and analysis of their success. However, similar issues regarding programs are less researched. The principles of project and program management and evaluation of project and program success are fundamentally different and cannot be used interchangeably. Therefore, there is a clear need to know and organize the knowledge on the success of programs available in peer-reviewed journals. Determining the state of knowledge in the research on program success is essential in the context of their growing importance for modern organizations and the need to improve program development principles.

**Purpose of the article:** This paper aims to present the study's results on the literature in the field of social sciences on program success (from selected indexed journals) and to indicate potential directions for developing research in this area.

**Methods:** Basic bibliometric methods related to two world-leading citation databases (Web of Science and Scopus) were used for a quantitative preliminary extensive literature review (2002–2022). Additionally, manual, qualitative, and in-depth research was carried out in a scope limited to selected business and management categories.

**Findings & value added:** An outline of existing knowledge in social sciences, the primary study contributors and their locations, emerging trends, and research gaps in the study on the success program have been identified. The concept of 'program success' evolution over time and references to the 'project success' term were also presented. The obtained results are essential for developing research, considering the holistic understanding of program success related to getting multifaceted and multilevel outcomes and benefits, and form a solid basis for continuing research in this field.

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### *Tax debt collection in Poland and selected European union member states: a comparison of efficiency indicators*

*JEL Classification:* E62; H20; H83

*Keywords:* tax arrears; enforcement procedures; debt collection

#### ABSTRACT

**Research background:** A damaging effect on tax collection is not only exercised by the actions of tax evaders but also the unwillingness or incapability of some taxpayers to pay tax due on time. As a result of such non-compliance schemes efficiency in revenue raising may also be negatively influenced by rapidly growing tax debt. Depending on coexistence of additional determinants the scale and structure of tax arrears may have a detrimental effect on the public finance sector. For that reason every time the functioning of the tax administration in the European Union member states is evaluated, tax debt recovery performance is taken into account. The development of the proper tax debt management strategy is therefore also on the priority list for all the governments.

**Methods:** Selected indicators of tax collection performance are applied to evaluate the tax arrears accumulation, structure and recovery. Comparative analysis of these indicators is conducted to juxtapose the operational performance of different member states of the European Union in this regard.

**Purpose of the article:** The paper attempts to envisage the problem of tax debt formation and investigate into the structure of tax arrears in Poland. It also provides for a comparative analysis among the European Union member states, with application of selected efficiency indicators, considers some factors behind tax debt accumulation and presents some measures taken by the Polish government in order to manage tax debt.

**Findings & value added:** Some of the countries are continuously coping with the problem of skyrocketing stock of tax arrears while others are relatively successful on that field. Rapidly accumulating tax debt has since many years posed a challenge to the Polish tax administration. It is relatively high in Poland in comparison to other European Union member states. Its scale is preoccupying especially with regard to taxes imposed on businesses. For many years Poland has applied predominantly conventional methods to deal with tax debtors. Some countries of the European Union successfully launched more pioneering methods which led to the decrease in stock of arrears.

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***E-customer preferences on sustainable last mile deliveries in the e-commerce market: the generational perspective***

*JEL Classification:* D11; D12; L81; L87

*Keywords:* e-commerce; e-customer; sustainable last mile delivery; generations; correspondence analysis

**ABSTRACT**

**Research background:** In the last few years e-commerce market has increased in population shares but the situation has changed dramatically since the Covid-19 pandemic. Electronic marketplaces have changed due to rapid digitalization and shopping. Online services offer the possibility to choose a different delivery method such as home delivery or out-of-home delivery. This aspect of the e-commerce market faces an increased interest among practitioners and academia in the field of sustainable last mile deliveries. Interestingly, the subject literature consists of papers analyzing the e-commerce impact on the last-mile delivery. However, the identification of factors for choosing a delivery method and factors that motivate e-customers to choose an eco-friendly delivery method is still an unrecognized field of research.

**Purpose of the article:** The authors of the paper focused on the e-customer perspective on sustainable deliveries in cities. Thus, the main purpose of the paper is to compare factors among the generations that motivate e-customers for choosing a delivery method.

**Methods:** The research was conducted among 1,110 e-customers in Poland in 2021. The paper aims to answer the following research question: what factors motivate each generation for choosing a delivery method? To answer the above-mentioned question, the correspondence analysis (MCA) is prepared that help to identify and compare factors in each generation.

**Findings & value added:** The original research procedure focused on the use of multivariate statistical methods in the study of e-customers' preferences. The analysis revealed three clusters of e-customers in terms of pro-sustainable factors: (a) aged 65+ without pro-sustainable tendency, (b) aged 18–64 with pro-sustainable attitudes, and (c) mixed with no identified delivery preferences. As a result of the research, it can be concluded that the parcel price and the possibility of free return are still the most important factors in choosing the delivery method.

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***Development of the renewable energy in the context of circular economy: what are the opportunities for Lithuania?***

*JEL Classification:* Q50; Q29; F63

*Keywords:* circular economy; sustainable development; renewable energy

**ABSTRACT**

**Research background:** In order to tackle climate change and ensure Paris agreements are met, countries are forced to look for alternative ways of producing, consuming and wasting and adopt a circular economy. Reduction of greenhouse gas emissions becomes one of the key elements. The demand for electricity is increasing, and most greenhouse gas emission comes from the energy sector. Because of that, it is crucial to ensure the transition from fossil fuels to renewable energy. For example, Lithuania imports most of its electricity needs and the country's renewable energy potential is not fully used. Lithuania has immense wind energy potential, especially in offshore wind farms; countries' solar energy capacity is steadily increasing and moving towards European Union goals for clean energy and a sustainable future.

**Purpose of the article:** The purpose of the study is to determine the relationship between circular economy and renewable energy. The study focuses on the importance of renewable energy as a tool for the circular economy, sustainable development and energy independence in Lithuania and highlights the progress achieved in renewable energy as well as effectiveness of renewable energy expansion in different regions of Lithuania.

**Methods:** For efficiency assessment of the circular economy and renewable energy performance data envelopment analysis (DEA) and Tobit regression were performed.

**Findings & value added:** This study presents a relation analysis of the circular economy and renewable energy. Renewable energy is one of the key elements of circular economy development. The study reveals that East Lithuania has the most significant potential among all regions of the country for renewable energy development and implementing circular economy practices. Electricity prices and subsidization of renewable energy solutions are the most effective pillars for renewable energy expansion. Current policy for the expansion of renewable energy in Lithuania and the European Union should be improved in order to ensure a switch to green energy. Recommendations for current renewable energy and circular economy policy improvements were presented in this article.



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### *Ordoliberalism: a third way?*

*JEL Classification: B25*

*Keywords: ordoliberalism; liberalism; neoliberalism; economic order*

#### ABSTRACT

**Research background:** To a limited extent, modern researchers are interested in ordoliberalism, as a theory of the socio-economic system, which is confirmed by the results of the bibliometric analysis. In conducted studies, the assumptions of ordoliberalism are used partially, for example, for research on: the role of the state in the economy, the antitrust law, the theoretical assumptions of the SME, the determinants of German economic policy after World War II.

**Purpose of the article:** The aim of this article is to present the possibilities offered by the ordoliberal theory that predispose it to determine a socio-economic order which makes it possible to tackle the dysfunctions and crises that afflict today's economy.

**Methods:** The research methodology involves a critical analysis of the works of the most essential representatives of ordoliberal thought, particularly Walter Eucken and others, from the perspective of the above mentioned purpose of the study. This requires examining German-Polish and English-language publications of the authors included in the mainstream ordoliberalism.

**Findings & value added:** As a result of the conducted analysis, the hypothesis about the existence of the elements of ordoliberal theory that allow it to respond to the challenges of the modern world, including economic, social, environmental and climate crises and pandemic threats has been confirmed. Research of this kind implies a return of thinking in terms of economic order, and thus contributes to the theory of economics.

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***Outsourcing in the management of manufacturing companies in Poland***

*JEL Classification: M21; M11*

*Keywords: management; outsourcing; manufacturing companies; benefits*

**ABSTRACT**

**Research background:** Outsourcing is undoubtedly a concept consistent with the current trends in the management of economic entities which result primarily from changes occurring in their turbulent environment. Therefore, outsourcing should be seen as a complex business management tool that has a solid theoretical basis, with its impact covering many various aspects of the functioning of modern economic entities.

**Purpose of the article:** The aim of this article is to explain how manufacturing companies approach the outsourcing of processes/functions to external entities and to identify the benefits they gain from using outsourcing arrangements. An effort was also undertaken to diagnose the factors for not using outsourcing services. **Methods:** The formulated objectives of the study influenced the hypotheses and structure of the survey. The survey was conducted in 2020 in the pre-pandemic period, with a sample size of N=120, including owners/managers of manufacturing companies. Non-random sampling was used. Questionnaires were sent to 200 companies, and only 126 were completed, of which 6 were not completed in full, and were therefore rejected. Hypothesis verification was carried out in turn using a chi-square test.

**Findings & value added:** When considering the premises for the use of outsourcing by business entities, one should first of all take into account the fact that in each enterprise there are many different internal factors, the existence of which affects, to a greater or lesser extent, outsourcing decisions.

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### *Monitoring system of the economic security risk management of investment activities in the context of the digital economy development*

*JEL Classification: E50; E60; F52; F60; G28; O33*

*Keywords: economic security; digital economy; technological change; investments*

#### ABSTRACT

**Research background:** the growing role of cyber technology development in business and society, the growing instability of the market environment, increased competition, geopolitical risks, economic wars, local recessions, globalization and integration have significantly affected investment activities. At the same time, disruptive innovation and the creation of new opportunities have given rise to new challenges. It occurs the need to study threats at the micro and macro levels and assess the impact of risks on management decision-making. All this necessitates a new original approach to the process of managing personal and corporate investments, especially with the introduction of digital technologies.

**Purpose of the article:** to propose a system for monitoring the risk management of economic security of digital investment activity, which contains a methodology for assessing threats at the micro and macro level and explores the impact of risks on management decision-making.

**Methods:** theoretical and empirical research (for the development of scientific concepts that relate to the problems of economic security); analysis and synthesis (to describe the features of investment activity) deduction and expert assessments (when interpolating the results of the study from the macroeconomic level to the micro level); statistical analysis (when analyzing the dynamics of the components of the system for assessing economic security); econometric approach to modeling key indicators of economic security of investment activities (to determine the influence of factors on the level of digital security); correlation-regression analysis (for the development of an economic and mathematical model for assessing the economic security of investment activity).

**Findings & value added:** Proposed systems in monitoring the risk management of economic security of investment activities, which allows to evaluate the effectiveness of implemented adaptation measures to ensure the economic security of financial assets by calculating the indicators of the risk zone at the micro and macro levels and the resulting situational components.

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### *The emotional surge impact on the formation of a personal brand as an SMM product*

*JEL Classification: M30; M31; M12*

*Keywords: personal brand; self-development; self-improvement; audience engagement*

#### ABSTRACT

**Research background:** the occurrence of stress contributes to solving regular problems of adaptation, finding new ways of self-development, and social support. A short-term emotional surge (stress) stimulates the search for new ways of individual human development. Creating a personal blog is one way to overcome the negative effects of stress. A popular personal blog focuses followers' attention on their personality and promotes self-improvement and development. In this study, we focus only on individuals who have built a personal brand by promoting their personal blogs on social media.

**Purpose of the article:** personal brand as a carrier of unique knowledge and professional skills is a product of public perception. This is confirmed by the fact that the individuality of the brand is associated with the created image, to which consumers and society as a whole react. Thus, personal branding is a competent step-by-step plan for personal promotion and development. The main task of this study is to identify the motivational factors of personal brand development and the impact of stress on them.

**Methods:** to determine sample size, we performed an a priori power analysis for within-subjects repeated measures analysis of variance. In parallel, we conducted a regression analysis of the degree of involvement and trust in personal brands in social networks to determine the objects of the experimental analysis using the structured interview method. To establish confirmability, validity, transferability, and reliability during qualitative data analysis, the following methods were used: expert debriefing; coding, etc. To analyze the qualitative research data, we ran a linear regression to analyze the effect of audience engagement through post-response, self-development effect, and self-satisfaction.

**Findings & value added:** the obtained data suggest that uncertainty about one's own significance in social development should make appeals for social support more persuasive than when such appeals are not used. And also that the crisis of personal development should make appeals to attention deficit more convincing than when there are no such appeals.

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### *A novel approach to estimating the debt capacity of European SMEs*

*JEL Classification:* G32; G33

*Keywords:* debt capacity; financial distress; macroeconomic factors; financial constraints

#### ABSTRACT

**Research background:** The concept of debt capacity assumes that a maximum value of debt ratio exists that when exceeded triggers unfavourable consequences, such as drop in market value, default or a change in the business' creditworthiness. With the current state of the art there is a priori no theoretical assurance that such a specific value exists, or rather it is represented by an interval of values. Beyond that, our understanding of debt capacity is often limited to a theoretical approximation by firm-specific factors, while the context of macroeconomic factors, especially those critical for SMEs, is neglected.

**Purpose of the article:** The aim of this paper is to present a novel approach to estimating SMEs' debt capacity. Further, the aim is to answer the question of what firm-level and macro-economy conditions lead to exhausting the SMEs' debt capacity and under what conditions a specific value of maximum debt capacity could be estimated.

**Methods:** To estimate the debt capacity, we suggest a use of an information entropy minimising heuristic and the Minimal Description Length Principle. In this approach, the observed feature space is categorised into several regions. In this case, such a region represents a set of firm- and macroeconomy-specific conditions forming the debt capacity of the SMEs. To the best of our knowledge, such an approach has not yet been used in debt capacity applications.

**Findings & value added:** We found out that the debt ratio itself provides little explanation of exhausted debt capacity, suggesting that high debt levels are compensated for by other factors. By using the suggested approach, a set of more than 100 different regions was analysed. It was found that in case of five regions (sets of conditions) the debt capacity is exhausted, as the high level of debt has significant distress consequences.

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*Unstable government revenues in uncertain times: which taxes are especially volatile and why?*

*JEL Classification:* H20; H21; K34; E62

*Keywords:* public finance; government revenue; taxation

ABSTRACT

**Research background:** External shocks affect the performance of economies. This is especially true recently after COVID-19 pandemics and ongoing war in Ukraine. States struggle to maintain their revenues in order to avoid skyrocketing public debts. Yet, especially now, governments face challenges connected with high uncertainty of inflows from the taxes.

**Purpose of the article:** The aim of the article is improvement in understanding of both (i) the variability of government revenues sourced from selected taxes binding in the EU as well as (ii) the potential reasons for their fluctuations.

**Methods:** The calculation are made based on empirical data for EU Members States for the period 1995–2020. Author considers revenues from different taxes, their characteristics as well as macroeconomic circumstances. Study is executed with usage of statistical tools that include calculation of coefficient of variation, trend estimation, Hodrick–Prescott filter, correlation of linear trend and the trend estimated with Hodrick–Prescott filter, ANOVA and ANCOVA, while controlling for macroeconomic factors or variables typical for particular taxes in given jurisdiction at a certain period.

**Findings & value added:** Author expects corporate income taxes and sectoral taxes to be characterized by greater variability in terms of revenues they provide than property taxes, taxes connected with consumption, or taxes imposed on income of individuals. Factors affecting that variability should be analysed in this study and are not fully known to the author at this stage. Due to lack of comprehensive research in previous studies in this respect, findings presented in this article may provide for a useful hint for policymakers in further design of optimal tax system that would provide for stable and predictable sources of income to the government.

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***Generation Z's attitudes toward environmental changes and renewable electricity: evidence based on the New Ecological Paradigm***

*JEL Classification:* Q51; Q56; Z19

*Keywords:* NEP; pro-ecological attitudes; sustainability; renewable energy sources; environment

ABSTRACT

**Research background:** The current energy crisis and the conflict in Ukraine have resulted in economies becoming more dependent on natural resources. Additionally, the European Green Deal mandates the achievement of carbon neutrality by 2050. It is widely acknowledged that Generation Z (Gen Z) is an influential segment of society whose action will determine the future path of sustainable development. Therefore, this generation should be the focus of research into environmental issues.

**Purpose of the article:** The study sought to examine Gen Z's attitudes toward environmental changes (EC) and renewable electricity (RE). We investigated two research questions about the relationship between attitudes regarding EC and RE, and attitudes regarding EC and willingness to pay for RE.

**Methods:** The sample included 799 respondents who were surveyed in Poland. The New Ecological Paradigm (NEP) was used to determine attitudes toward EC. They were compared to evaluation and attitudes toward RE. The analysis included descriptive statistics, the Pearson correlation coefficient, Kruskal–Wallis analysis of variance, and a binary logistic regression model.

**Findings & value added:** The research results indicated that Gen Z is aware of EC according to the NEP. However, NEP scores are strongly correlated with gender and the area of residence. Furthermore, there is a significant positive relationship between EC and evaluation of RE. Moreover, only half of respondents would be willing to pay more for increase in RE supply. These results are dependent on gender and NEP scores. Using a concurrent analysis of NEP and RE, this research provides new knowledge about Gen Z's attitudes toward EC. The results may be useful to policymakers and stakeholders who want to make environmental sustainability a priority during this time of energy crisis. As pro-ecological changes require human involvement, the results may have applications for improving educational and marketing campaigns dedicated to Gen Z.

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***Segmentation of e-customers in terms of sustainable last-mile delivery: the case of Poland***

*JEL Classification: D01; D15; C49; C83*

*Keywords: last-mile delivery; e-commerce; conjoint analysis; e-customers segmentation; customer preferences*

**ABSTRACT**

**Research background:** A rapidly developing e-commerce market and growing customer expectations regarding the speed and frequency of deliveries have made the last mile of the supply chain more challenging. The expectations of e-customers increase every year. They choose those companies that deliver goods faster and cheaper than others. A significant group of customers in Poland still select home delivery. Many of them frequently return products to the retailer. These expectations and behaviour cause a challenge for the transport companies to deliver parcels to the individual customer soon after the purchase. In addition, increasingly frequent deliveries contribute to environmental pollution, congestion and accidents, as well as more expensive deliveries.

**Purpose of the article:** The paper aims to identify e-customers' preferences and assess their impact on sustainable last-mile delivery in the e-commerce market. The authors have also identified the factors influencing the e-customers' behaviour to make last-mile delivery more sustainable.

**Methods:** The conjoint analysis was applied to evaluate a set of profiles, namely real or hypothetical products and services, defined by selected attributes in order to investigate the overall preferences for the profiles made by the respondents.

**Findings & value added:** As a results the segmentation of e-customers according their preferences connected with last-mile delivery was presented. The added value of the paper is the presentation of the methodology to assess the impact of customer preferences on sustainable last-mile delivery. The obtained results may contribute to the formulation of recommendations for e-commerce and logistics companies regarding the preferences of e-customers to improve the sustainability of last-mile delivery. This paper uses the research results conducted under the project "Sustainable city logistics of last-mile delivery and returns on the e-commerce market. Various groups of stakeholders' perspective", financed by the National Science Centre, no. 2018/31/B/HS4/03711, as part of the "Opus 16" competition.



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***Knowledge and technology transfer channels from universities to enterprises: the perspective of technical universities***

*JEL Classification:* M13; O31; O32

*Keywords:* university-industry relations; KTT (knowledge and technology transfer); interactions channels

ABSTRACT

**Research background:** The interest in the university-industry interactions has been the subject of many studies [Nelson et al., 2002; Laursen, Salter, 2004; Este, Patel, 2007; Brimble, Doner, 2007; Segarra-Blasco, Carod, 2008; Tether, Tajar, 2008; Skute et al. 2017; Perkmann et al., 2021]. Contrasting views on the role of universities in this process and the desired relationship between universities and businesses emerged from these articles. While commercialization is the main form of knowledge transfer from science to business, there are many other engagement channels through which scientists can interact with companies [Schartinger et al., 2001; Agrawal, Henderson, 2002; Cohen et al., 2002; Mowery, Sampat, 2005; Perkmann et al., 2013, 2021].

**Purpose of the article:** The aim of the article is an empirical verification of the channels through which the transfer of knowledge and technology from technical universities to enterprises takes place.

**Methods:** Factor analysis, Structural Equation Modeling (SEM)

**Findings & value added:** The factor analysis showed that there are 3 channels through which scientists from technical universities establish relations with enterprises: the consulting and educational channel, the scientific and information channel, and the research and commercialization channel. In addition, the structural model verified which elements of the university's ecosystem affect the establishment of relationships through a given channel. The added value of the study is drawing conclusions on a large population of scientists (over 500) and systematizing the activities undertaken by scientists in cooperation with companies.

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### *Identification of risk in the management of enterprises in the SME sector*

*JEL Classification:* D81; G32

*Keywords:* : risk; management risk; identification of risk

#### ABSTRACT

**Research background:** When running a business in the form of an enterprise, we agree to take the associated risk. The ubiquitous uncertainty about the future of enterprises, especially from the SME sector, makes risk management more and more important, which includes several successive stages. One of the most important is risk identification. Its purpose is relatively early detection of possible threats that, if they occur, will affect the company and its goals. Knowledge of the factors that may disrupt the functioning of an entity, especially a small and medium one, is the foundation in the approach to the issue of risk accompanying business activity. Properly conducted risk identification should cover all levels of the company's operation and its relations with the environment.

**Purpose of the article:** The aim of the article is to indicate the importance of risk identification and to indicate and analyze events occurring within the enterprise or in its environment that may hinder the functioning of small and medium-sized business entities.

**Methods:** The paper uses a critical literature review, empirical research methods and statistical methods. Based on the results of research conducted in small and medium-sized enterprises in the Silesian Voivodeship, the key factors of the accompanying risk and the impact of individual risks on their operations were determined.

**Findings & value added:** Identification of factors threatening the functioning of enterprises increases the effectiveness of risk management that accompanies the conducted activity. To make it easier to identify events that may disrupt the functioning of SMEs, it is important to prepare a risk register, on the basis of which it is possible to identify key factors that threaten the operations of enterprises. The risk grouped in seven areas made it possible to identify a register of the main risks characteristic of enterprises in the SME sector.

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### *Asymmetry and convergence in the development of digital technologies in the EU countries*

*JEL Classification: F63 F68 O52*

*Keywords: digital transformation; EU countries; digital gap*

#### ABSTRACT

**Research background:** Digitization in the context of the COVID-19 pandemic has accelerated significantly across European Union, including in regions that are at the stage of pre-chasing development. However, as innovative technologies are intensively integrated into everyday life, the digital gap between the EU countries is increasing. The widening digital gap is becoming a serious threat to achieving the sustainable development goals of European Union and building a sustainable European society.

**Purpose of the article:** The purpose of the article is to empirically substantiate the inclusiveness and convergence of the digital strategy in the EU countries.

**Methods:** The methodological apparatus includes: (i) fuzzy sets to estimate the level of asymmetry in access to transactional (electronic commerce), informational (cloud computing), operational (artificial intelligence) technologies in the EU countries; (ii) cluster analysis to group the countries according the convergence of digitalization.

**Findings & value added:** Using the method of fuzzy sets, was assessed. Cluster groups of countries are determined by the convergence of digitalization and ways to ensure long-term competitiveness. The directions for reducing the digital gap in the EU countries are substantiated by changing the priorities of spending on research and innovation as well as increasing productivity, diversifying the use of digital technologies. The obtained empirical results can serve as a basis for improving the effectiveness of the digitalization policy in the EU countries in accordance with individual convergence goals. The gradual leveling of the digital gap will ensure the increasing of European competitiveness and achieving the sustainability of the European economy.

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### *The macroeconomic stability of United Kingdom after Brexit*

*JEL Classification: E02; E66; F15*

*Keywords: Macroeconomics Stabilization Pentagon; macroeconomic stabilization; Brexit*

#### ABSTRACT

**Research background:** The United Kingdom has been triggered Article 50 of the Lisbon Treaty on 29th March 2017 and formally has been begun Britain's exit from EU. The Withdrawal Agreement entered into force on 1 February 2020. The very announcement of Brexit aroused many concerns and uncertainty. The Withdrawal has taken place in an orderly manner, the UK and the EU remain in close partnership with new agreements. Such a significant institutional change also may affect economy and indirectly macroeconomic stability.

**Purpose of the article:** This research aims to identify and assess the changes in macroeconomic stability in United Kingdom.

**Methods:** . The method used in the study is a comparative analysis that employs a macroeconomic stabilization pentagon model (MSP). The macroeconomic stabilization pentagon is based on the GDP growth rate, the unemployment rate, the inflation rate, the budget balance and the current account balance. Timerange of research is 2015–2021. The MSP indicators for United Kingdom and UE-27 are compared.

**Findings & value added:** In the period 2015–2018, i.e. during the uncertainty as to the results of the Withdrawal Agreement negotiation, the MSP index fluctuates slightly, which we interpret as very small changes in macroeconomic stability. The UK's macroeconomic stability has fallen dramatically in 2020, the first year out of the EU. It is worth emphasizing that the UK's macroeconomic stability was lower than UE-27one throughout the period studied.

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### *Non-financial reporting in the area of accounting: bibliometric analysis*

*JEL Classification: M41; A12*

*Keywords: accounting; non-financial reporting; corporate social responsibility; management; bibliometric*

#### ABSTRACT

**Research background:** The subject of financial reporting has been discussed for decades. The concept of non-financial reporting (NFR) arose later, and thus the study of this field began slightly later. This is currently a subject with great research potential. Both the multitude of studies of the scientific community and data obtained from business practice confirm the increase in the importance of non-financial reporting. A review of publications on this subject will indicate the state of this area of research. Particular attention will be paid to the role of NFR from an accounting point of view.

**Purpose of the article:** Evaluation of non-financial reporting as a new area of scientific research using bibliometric analysis of scientific publications indexed in the Web of Science database. Investigating the contribution of scientific communities related to accounting, in the development of this area of research

**Methods:** As part of the research, an analysis of the number of publications and the number of citations, and keyword statistics will be carried out. The database of the Web of Science and the Zotero program will be the research tools. The review will be carried out following the methodology and will be divided into 5 stages, comprising: preliminary search, full search and literature acquisition, evaluation of collected documents, synthesis and analysis of results, and summary of results

**Findings & value added:** The results will allow for assessing the research activity and the stage of development of the research in the field of non-financial reporting. What is the level of interest of accounting-related scientists in this subject? The latest correctly conducted scan of the issue of NFR will reliably summarise the current state of knowledge, providing information about gaps in the literature and the need to carry out new research. It can also be a way to identify new research areas. The bibliometric analysis of non-financial reporting from the accounting point of view will be a new and original contribution to research in this field.

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### *Socio-economic development of rural municipalities representing various demographic and functional types*

*JEL Classification: R11*

*Keywords: demographic typology; functional typology; rural areas; socio-economic development*

#### ABSTRACT

**Research background:** Rural areas are usually characterised by a slower pace of growth as compared with urban areas. However, they do not constitute a uniform group of entities, representing considerable diversity in terms of development. Among the determinants of the socio-economic development of rural areas, an important role is played by their demographic potential and the economic functions performed. The demographic typology of municipalities is used in identifying population development types in the analysed entities depending on natural growth rates and a migration balance. The functional typology of rural municipalities is based on the differences between them in terms of socio-economic structure. Understanding the relationship between the development of a commune and its demographic and functional type is indispensable for planning the development policy and for formulating local strategies.

**Purpose of the article:** The aim of the paper is to assess gaps in the level of development of rural municipalities of the Malopolskie province depending on the demographic types they represent and the economic functions they perform.

**Methods:** Research methods adopted in the article: statistical data analysis including dynamic analysis, comparative analysis, analysis of variance Anova, Webb's method, taxonomic development pattern method.

**Findings & value added:** Municipalities with different population development types and specific functional structures develop in different ways. This paper undertakes the relatively rarely discussed issue of the diversity of rural municipalities in the context of the functions they perform as well as their demographic types, using advanced statistical methods.

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### *The concept of EUropreneurship*

*JEL Classification:* L26; O3; O35; O52

*Keywords:* EUropreneurship; entrepreneurship; innovativeness; development; commercialization

#### ABSTRACT

**Research background:** The issue of maintaining the integrity of the European Union, on the one hand, and the possibility of EU enlargement, on the other hand, pose a formidable challenge in the current perspective of military actions, BREXIT and intra-Community challenges related to political, energy and health tensions decreasing the welfare EU vision. This challenge, accompanied by a constant vision of increasing the competitiveness of the EU, can be analyzed from a macroeconomic perspective, and such a view is easily perceived. In contrast, the micro context is given far less prominence in the policy space and the development of the economy. However this view is the perspective of the individual, being a fundamental link in the mechanism of building the welfare of societies in the European Union, associated countries and cooperating countries. This perspective may be distinctively a solution to the problem of increasing the integration and EU welfare.

**Purpose of the article:** The purpose of this paper is to present the concept of European entrepreneurship (EUropreneurship), in the context of the possibilities of a bottom-up EU entrepreneurial reintegration movement.

**Methods:** The groundwork for realizing the stated purpose of the study is the theoretical analysis, based on the literature review, as well as the analysis of data from a questionnaire survey that was conducted on a representation of the business, social and research sectors from various EU countries.

**Findings & value added:** The understanding of entrepreneurship in the EU is twofold: on the one hand, there is the reference to the general level of involvement of social, public and business, among others, and on the other hand, there is the purely business approach, resulting in the commercialization of the business concept. Given the growing importance of social entrepreneurship, among other things, it seems that in defining entrepreneurship there is a growing tendency to apply a broader view of the concept, incorporating various forms of activity. In this context, entrepreneurship can be examined from the perspective of the place where it is implemented (level of urbanization), the age of the people who get involved, the range of impact of entrepreneurial concepts (radical innovations – resulting in the dynamic development of enterprises) as well as a number of other approaches that are variously prioritized by different European stakeholders. As a result of expanding the definition of entrepreneurial concepts through a European prism, the concept of EUropreneurship can thus be defined.

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### *Exploring rationality of investors in P2P lending*

*JEL Classification: D12; G23; G41; O16*

*Keywords: investor behaviour; investor rationality; bounded rationality; P2P lending*

#### ABSTRACT

**Research background:** Over the last decades globalization, technological innovations and digitalization, easier cross border investments and other factors reshape investment environment and prompt the development of innovative financial services, such as P2P lending. The innovative financial services differ from the traditional ones in such characteristics as lower amount of minimum investment, easier access, digital solutions, non-traditional providers, lower level of regulation of the services and their providers, etc. All those characteristics enable investors to make quick and more frequent investment decisions, yet leave them more vulnerable to overreaction, overconfidence, neglect of failure and other behavioral biases.

**Purpose of the article:** Objectives of our study are to propose an approach and develop criteria on how to assess the rationality of innovative financial services investors and then to assess Lithuanian P2P lending investors' rationality and its influencing factors.

**Methods:** The research data was collected through an online survey of Lithuanian P2P lending investors. The index was developed to measure the rationality level of individual P2P lending investors; descriptive and cluster analysis were performed to assess the type of investors rationality, while t-test, ANOVA test and regression analysis were then used to identify its influencing factors.

**Findings & value added:** The developed methodology for the assessment of the level and type of P2P lending investors' rationality covers 3 groups of criteria: risk and return, available information and behavioural biases. The results reveal a moderate level rationality with bounded rationality being a dominant form of investors' behavior across P2P lending investors. Further clustering showed that such rationality type largely depends on the behavioural biases rather than on failing to understand and apply of risk and return criteria. Our research brings new evidence on the level and type of innovative financial services investors' rationality.



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### *Direct marketing in Lithuania under GDPR: consent and legitimate interests*

*JEL Classification: M31; M38; K22*

*Keywords: General Data Protection Regulation; direct marketing; lawfulness of data processing; rights of the data subject*

#### ABSTRACT

**Research background:** Digital technologies have altered the competitive environment in business. Data have become a form of business capital. Collected data lets to provide better services and manage customer relationships, which can be monetarily expressed with Customer Lifetime Value, more effectively through highly personalized services, but this leads to the personalization-privacy paradox. The protection of privacy has frequently not been regarded as a priority due to high returns on personal data processing and low fines for privacy breaches, which is why the EU Commission adopted the General Data Protection Regulation (GDPR), which entered into force on 25 May 2018. The main problem discussed in this article is the fact that organizations' processing of personal data for direct marketing purposes does not comply with GDPR requirements. Organizations must ensure lawful and fair processing of personal data, and explain to consumers why they are collecting personal data, how it is going to be used and with whom the data will be shared. Another additional aim was to create an opportunity for consumers to exercise their rights.

**Purpose of the article:** The main purpose of this article is to develop a theoretical scheme of data processing for direct marketing purposes according to GDPR requirements.

**Methods:** The research methods used in this academic article include analysis and synthesis of scientific literature and legal documents, generalization.

**Findings & value added:** This theoretical scheme of direct marketing under the GDPR would help organizations establish a legitimate basis for data processing and define the rights of the data subject when processing data for direct marketing purposes.

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### *Internationalization of science and technology parks in Poland versus their development phase*

*JEL Classification:* F0; O3; R11

*Keywords:* internacjonalizacja; life-cycle stage; science & technology park

#### ABSTRACT

**Research background:** Science and technology park (STP) is an important tool of innovation policy. The fundamental mission of the park is to stimulate the economic development of the region. In order to fulfill their basic mission in the modern globalized and digitized world, as well as to carry out new tasks in the field of internationalization of innovative processes, parks have to incorporate completely new ones into their classic roles and activities. An example of a new area of STP activity is undertaking and developing activities in the field of internationalization. This area of the park's activity can be considered at four levels: the institutional level (internationalization of the park), the micro level (internationalization of enterprises — tenants of the park), the behavioral level (internationalization of relations between park managers and entrepreneurs) and the systemic level (internationalization of the system in which the park operates). The research question is: what is the stage of internationalization of Polish Science and Technology Parks at the institutional level? What are the relationships between the stage of internationalization and the development phase of the park?

**Purpose of the article:** The aim of the article is to characterize the internationalization of science and technology parks in institutional terms, while the main goal of the research was to diagnose the stage of internationalization of these organizations in Poland in the context of parks development phases.

**Methods:** To achieve the goal in the theoretical layer, a critical analysis of the literature was carried out. In the empirical layer, direct own research was carried out, using the survey method, in which the research technique was used in the form of an interview according to the author's questionnaire. The research was carried out in 2022, with the participation of the management staff from 18 STPs in Poland (55%). The diagnosis of the internationalization stage of PNT was made on one of the four possible levels of analysis, i.e. institutional. For the purposes of the study, three phases of park development were defined and operationalized based on the criteria identified by J. Allen (2007): creation phase, consolidation phase and maturity phase.

**Findings & value added:** The result of the research is the understanding of the phenomenon of internationalization of Polish STPs at the institutional level in the context of their life-cycle stages, which is an original approach to this issue and the first such study carried out in Poland. The analysis of the aggregated data has corroborated the diversity in the level of parks' internationalization, but its low level is dominant. Moreover, the process itself is not linear.

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***Resilience of the Polish-Ukrainian borderland in the context of the influx of war refugees from Ukraine***

*JEL Classification:* F15; J01; J08; J65; P51; R50

*Keywords:* war refugees; Polish-Ukrainian borderland; labor market; entrepreneurs

**ABSTRACT**

**Research background:** The war escalation in Ukraine in February 2022 tremendously intensified migration processes. Regions bordering Ukraine, including the Polish-Ukrainian borderland, played an important front-line role.

**Purpose of the article:** The aim of this article is to demonstrate the impact of these migrations on this region and show to what extent the labor market in the Polish-Ukrainian borderland is resistant to external factors — in this case, the influx of war refugees. The authors hypothesise that the influx of refugees to the border region slightly affected the level of unemployment that would have been in the absence of this situation.

**Methods:** The novelty in this approach to the study of this hypothetical rate of unemployment involves filling the gap in the literature regarding research of contact regions, while also developing the existing approaches in the research method used. To assess the differences between the observed and the hypothetical unemployment rate, the ATE index was used, which evaluates the total average impact of a pandemic expressed as the difference between the mean values of the outcome variables in the event of a pandemic and a counterfactual situation (Svabova et al. (2021)).

**Findings & value added:** The novelty in this approach to the study of this hypothetical rate of unemployment involves filling the gap in the literature regarding research of contact regions, while also developing the existing approaches in the research method used. The presented study is part of the work carried out under the project NAWA entitled Challenges for the labor market in counties in the Polish-Ukrainian borderland with regard to the influx of war refugees from Ukraine. Assessment of the situation, conclusions for Polish regions, entrepreneurs, and county labor offices.

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### *Luxury, slow and fast fashion: a case study on the (un)sustainable creating of shared values*

*JEL Classification:* D16; D22; D82; K29; M14; Q01

*Keywords:* creating shared value (CSV); EU law; fashion industry; sustainability

#### ABSTRACT

**Research background:** Since crises magnify differences and bring both challenges and opportunities, the current challenging global setting makes the mutual appurtenance a fundamental platform to create confidence and also to lead to a unique strategic advantage. Due to its inherent particularities, the fashion industry is a relevant sphere for performing a categorial reflective case study about the understanding and employment of tcreating shared values (CSV) within the EU law framework.

**Purpose of the article:** The purpose of the article is to research and analyze how CSV is perceived by archetypical fashion industry businesses in a four step manner. Namely, what kind of CSVs are endorsed by luxury, slow and fast fashion industry businesses and how does this fit in the EU law framwork.

**Methods:** A four step case study with a field search is performed while using a qualitative manual Delphi approach. Firstly, 30 archetypical fashion industry businesses are split into luxury, slow and fast fashion categories. Secondly, for each business, and each of these three categories, research is done on how they primarily indentify their CSVs. Thirdly, the verification of these CSVs is performed in order to confirm or reject the genuiness and lack of greenwashing. Fourthly, the results are juxtaposed into the EU law framework.

**Findings & value added:** Based on the performed case study, there appears extremely interesting dynamics in the CSV perception and strategies by luxury, slow and fast fashion businesses with a clear overlap in the sphere of the EU law.

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### *An impact of management style on the welfare of the country*

*JEL Classification: H130; J24; M10; P52*

*Keywords: autocratic versus democratic management style; sources of power; welfare of the contry; comparative studies of particular economies*

#### ABSTRACT

**Research background:** The research concept will be developed based on strategic management theory, human capital theory and social development theory.

**Purpose of the article:** The aim of the research is to show the impact of autocratic versus democratic management style on the welfare of the country. Therefore, the role of selected management style indicators for changes in the level of welfare will be analyzed.

**Methods:** The research will be conducted on a large group of countries in the longest possible period. Countries will be divided in three groups of economies according to their income levels. In order to ensure the comparability of the obtained results, our research assumed the same size of the income-level groups of countries. The basis for assigning a country to one of the three income groups will be the World Bank's classification. The welfare measures in our study will be gross domestic product per capita (GDP pc), gross national income per capita (GNI pc), and expenditures on research and development activities (R&D). Correlation analysis, regression analysis, and cluster analysis will be probably used in our research.

**Findings & value added:** The results of the research will allow us to create a ranking of management style features according to their positive impact on GDP pc, GNI pc, and R&D activities. Research results will also enable us to group countries on autocratic management styles, mixed management styles, and democratic management style. Research conclusions can be useful for people managing enterprises. Secondly, they can provide valuable indications of how to change the public administration management system to increase its efficiency in multiplying the common good.

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*Does money matter, and for whom: the importance of financial motivational factors among employees of banks in Poland*

*JEL Classification: G21; G41; D9*

*Keywords: motivation; banking sector; competitive advantage; gender; age*

ABSTRACT

**Research background:** The organization's approach to building human capital is an essential factor in the success of market entities, and it determines a competitive advantage in the market. Due to the challenges and various market changes that banks face, building an effectively motivated multigenerational employee team and understanding employee intrinsic and extrinsic motivation is very important.

**Purpose of the article:** The paper aims to contribute to the literature and fill the research gap on the financial motivators available in banking and non-banking entities. The paper examines the role and importance of financial incentives, regularly used in the banking sector, in conjunction with a comprehensive analysis of their significance for representatives of different generations (X, Y, Z), gender, and career level in the sample of various institutions in the banking sector in Poland.

**Methods:** The analysis was made twofold: firstly, within extensive desk research, and secondly, based on the empirical survey in the form of an individual research questionnaire carried out among 418 employees of various banks and companies from their capital groups in the time just before the pandemic in 2020. The results were examined using statistical analysis, including non-parametric tests.

**Findings & value added:** The paper attempts to outline the opportunity of revising incentive systems in banking operations. We identified various respondents' attitudes to motivational financial factors and classified their importance concerning generation, age, and position in the organization. The study's results indicate that generational and gender differences affect the perception of bank financial incentive tools. Some financial motivational factors regularly used in banks do not equally motivate employees, which leads to the conclusion that banking institutions should inevitably include generational and gender factors in their motivational approach to employees.

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### ***Effect of corporate sustainability performance on the changes in payout policy of the top global companies***

*JEL Classification: F23; G35; M14*

*Keywords: payout policy; corporate sustainability; ESG scores; global companies*

#### ABSTRACT

**Research background:** Corporate sustainability is currently one of the most popular issues in theoretical and empirical research. It generally focuses on identifying the relationship between corporate sustainability performance (CSP) and corporate financial performance (CFP), although the CSP-CFP link is not investigated enough in the context of changes in dividend payments.

**Purpose of the article:** The paper aims to identify the relationship between CSP and changes in dividend payouts. To do this, a research hypothesis was formulated stating that improving CSP in environmental, social, governance, and economic dimensions increases the propensity to pay stable dividends.

**Methods:** The main empirical research method is the panel logistic regression model, which includes variables of corporate sustainability. Additionally, descriptive statistics and the Pearson correlation coefficients are analyzed. The empirical research was conducted using data on the top global companies listed in the Global 500 of 2021 from the period of 2011–2021. All required data were retrieved from the Refinitiv (Thomson Reuters) Eikon database.

**Findings & value added:** The main conclusion of the paper is that when all dimensions of corporate sustainability are integrated in the long run, only the strong effectiveness of corporate systems and processes inside a company make board members maintain dividends at the previous levels. It means that the research hypothesis cannot be confirmed for all corporate sustainability dimensions considered together. The value added of the paper is that the authors considered the long-term returns pillar score as one of the independent variables, which is not a commonly used approach, although economic sustainability is a key corporate sustainability dimension.

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### *Humanistic management paradigm in social enterprises*

*JEL Classification: A14; M21*

*Keywords: social enterprises; humanistic management; financial reports*

#### ABSTRACT

**Research background:** The dominant paradigm in management practice today is economic. It guarantees economic growth, but entails certain social and environmental costs. It is used by commercial enterprises. Social enterprises founded on different principles pursue social and economic goals. They guarantee development by referring to commonly accepted social values. Thanks to this, they provide additional environmental and social benefits. However, these enterprises are less often subject to research, especially the cooperatives that are part of them.

**Purpose of the article:** The aim of the article is to identify the management paradigm in social enterprises in the light of financial reports by management boards. In order to identify the management paradigm, reference was made to the concept of corporate social responsibility (CSR).

**Methods:** The research method is a comparative analysis of the content of financial reports of 30 selected social enterprises and commercial companies representing the dairy, trade, and insurance industries. The survey is qualitative in nature.

**Findings & value added:** Research results confirmed that there are essential differences in the management paradigms of the two analyzed types of enterprises. The management boards reports contain statements confirming responsibility in social, environmental and economic aspects however the social and environmental aspect is more often presented in management reports of social enterprises, has more manifestations, a broader and a deeper scope. The scope and the content of these reports allows for the conclusion that social enterprises have greater awareness of responsibility for society and the natural environment than commercial enterprises. They do more for society and the environment than commercial enterprises. On the other hand, the analysis of the content of management board reports of commercial enterprises shows that their dominant sense of responsibility is economic responsibility. The management picture that emerges from the social enterprise reports shows the use of elements of humanistic management, while the economic paradigm is more frequently applied in commercial companies. The research has a pioneering character. Its added value is the original idea of analyzing the content of company management reports in order to identify the applied management paradigms.



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### *Financing urban mobility resilience: identification of problem areas*

*JEL Classification: H72; R40; R51*

*Keywords: financing resilience; transportation resilience; urban public transport; urban mobility*

#### ABSTRACT

**Research background:** The efficient functioning of transportation systems is subject to various types of disruptions and risks. Transportation systems are strongly affected by all kinds of crises of local, regional, national or global scale. The European Union's transport policy indicates the need to build sustainable, intelligent and resilient urban mobility systems based on public mass transit. The paradigm of resilience has gained particular importance in the context of the global crises of the last 5 years. Resilient urban mobility systems are intended to provide the ability to respond quickly to disruptions that occur, allowing urban organisms to achieve operational stability.

**Purpose of the article:** The purpose of the study is to identify existing and potential instruments and tools for financing resilient public mass transit systems in Polish cities. The study will identify good practices in building resilient financing models for urban transportation.

**Methods:** The research is qualitative in nature. The study is based on literature review. Reports of national and international organizations dealing with issues of public transport operation were analyzed. Analysis of selected case studies was carried out.

**Findings & value added:** Financing of public mass transport in Poland is based on two main sources of income: fees from ticket sales and payments (compensations) made by local governments. Capital expenditures are made through external financing (mainly EU funds). As a result of the outbreak of the COVID-19 pandemic and the mobility restrictions introduced, there has been a significant decline in the number of passengers using public mass transportation, which has contributed to a drop in PTA revenues. The energy crisis contributed to a significant increase in the operating costs of public mass transportation providers. In this context, the key to building resilient public mass transport systems in urban areas is to make changes to existing laws aimed at ensuring a stable system of PTA financing.

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### *Detection of earnings manipulations during the corporate life cycle in Central European countries*

*JEL Classification:* G31; G32

*Keywords:* earnings management; corporate life cycle; cash flow pattern

#### ABSTRACT

**Research background:** The growing trend of financial distress risk worldwide increases the need for effective tools to detect accounting manipulation by stakeholders (debt holders, shareholders, suppliers, and customers). However, the well-known models of accrual earnings management do not reflect the financial specificities of individual life cycle stages and their cash flow patterns.

**Purpose of the article:** The study examines the impact of the corporate life cycle on the reliability of accrual earnings management models and identifies appropriate models for detecting accounting manipulation in Central European countries.

**Methods:** Seven accrual earnings management models were used. They were evaluated based on 5 criteria: explanatory power (adjusted coefficient of determination), model significance, significance of explanatory variables, predicted sign of explanatory variables and standard errors of variables. Finally, a comprehensive scoring model was used to determine the overall quality of the models examined. The study was conducted on a sample of more than 30,000 enterprises from four Central European countries (Czech Republic, Hungary, Poland, and Slovakia), data covered the period 2017–2021. Dickinson non-sequential life cycle model was used to distinguish life cycle stages according to cash flow patterns.

**Findings & value added:** The results of the study suggest that, firstly, discretionary accruals vary across countries as well as over the firm's life cycle; earnings manipulations have an inverted U-shape with mature firms tending to reduce their accounting profit. The reliability of the models examined was poor in the case of start-ups. This reflects the need to distinguish between life cycle stages in the detection of earnings manipulation.

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### *Digitalization as a resource in social enterprise performance during the COVID-19 pandemic*

*JEL Classification: E; L31; O31; O35*

*Keywords: resource dependency theory; digitalization; social enterprises; COVID-19*

#### ABSTRACT

**Research background:** The COVID-19 pandemic is considered an accelerator or catalyst of the adoption and growing use of digitalization in organizations. The pandemic necessitated the move to remote work, implementation of electronics-based processes and procedures, and adaptation to the requirements of suppliers, customers, and business partners. From a macro perspective, the digitalization of economic entities is seen as a solution to avoid a short-term economic collapse and maintain the resilience of economies resulting from lockdowns in individual sectors. Less is known about digitalization of social enterprises. We claim that a key resource during the COVID-19 pandemic is the digitalization of social enterprises.

**Purpose of the article:** This study aimed to establish the importance of digitalization as a resource used by SEs.

**Methods:** We analyzed survey data of representatives of Polish social enterprises using the CAWI technique. Based on the survey data, a descriptive analysis was conducted. To identify the relationship between the degree of digitalization and perception of the importance of web applications, tools, and systems in achieving goals of non-governmental organizations, Spearman's rank correlation coefficient was used.

**Findings & value added:** The results suggested that digitalization should be treated as an important resource in achieving economic and organizational goals, supporting internal communication, organization management, effective competition, cooperation with other organizations, and promotion of the organization. These findings have practical implications for managers of social enterprises and public authorities by indicating priority directions to support organizations. The novelty of this study is comparing usefulness of applications, tools, and IT systems for achieving social, economic, and organizational goals. This study contributes to the resource dependency theory by examining the impact of digitalization resources in the nonprofit sector, which has been overlooked in academic research to date.

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### *Effective concepts of management against the challenges of the modern world: lean and agile: competition or cooperation?*

*JEL Classification: M11; L2; M21*

*Keywords: agile; lean management; contemporary concepts of management; environmental instability; COVID-19; efficiency; supply chains; process management; flexibility; diversification; inventory; strategies*

#### ABSTRACT

**Research background:** For some time now, new strategies, concepts and solutions have been presented in the literature and implemented in business practice, concerning both process management and entire supply chains. They are to be an alternative to the existing concepts. They are focused on the speed of adaptation to changing conditions in the environment, flexibility, diversification and reducing the risk of disruptions. The justification are new conditions and challenges in the environment of enterprises, especially the Covid-19 pandemic, but also economic crises, wars, terrorism, natural disasters, changes in the prices of energy. An example of such a concept is the Agile strategy. According to some authors, this strategy is to be a competitive concept for the Lean Management. Other authors, believe that these concepts have a complementary and synergistic relationship with each other, and that there are possibilities to combine them, as happened in the case of Lean and SixSigma.

**Purpose of the article:** comparison of the effectiveness of Lean and Agile process and supply chain management strategies in conditions of environmental instability, based on literature and own research.

**Methods:** Literature review, direct research in companies (interviews with managers), and on this basis, development of case studies of applied strategies.

**Findings & value added:** Despite the instability of the environment, the Lean management concept can still be effective. It is also possible to effectively combine elements of one and the other strategy.

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### *Effective cost management in selected business entities in Poland in light of current economic conditions*

*JEL Classification:* G21; G30

*Keywords:* costs; enterprises; effective management

#### ABSTRACT

**Research background:** Current economic conditions, including, but not limited to, the rising inflation rate, changes in electricity prices or changes in tax law significantly affect the manner of operation of business entities in Poland. The economic impact of these changes varies greatly depending on the type of business, industry or economic sector represented. These changes are also reflected in the level and structure of the entities' own costs — primarily in the when considering costs by type. The multitude of changes that Polish companies now face also indicates the importance and relevance of the concept of effective cost management in these difficult economic conditions. Therefore, the need to adapt the business to the peculiarities of the new economic reality created the basis for a thorough identification of cost information needs coming in from the cost accounting systems used in companies. This became one of the prerequisites for undertaking research on evaluating the usefulness of cost accounting systems used in business entities for effective management of their costs.

**Purpose of the article:** The purpose of this article is to analyze and evaluate the impact of the current economic conditions on the level and structure of own costs of selected business entities from the perspective of effective management of this economic category.

**Methods:** The article presents the results of a comparative analysis of the level and structure of costs by type in three business entities representing manufacturing, trade and service sectors. The analysis covers the years 2018–2022 and is set against the backdrop of key economic developments of the past period, including the COVID-19 pandemic, the energy transition and the war in Ukraine.

**Findings & value added:** The main conclusion of the analysis is that the current economic conditions have a significant impact on the level and structure of own costs in business entities. Therefore, these entities need specialized economic tools to improve the efficiency of their cost management. It is because the traditional full-cost accounting system used by most business entities in Poland is proving to be inadequate in this regard.

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### *Exploring the correlation between regional variability in the level and quality of education and population income inequality*

*JEL Classification:* D31; I21; I24; I25

*Keywords:* education level; income level; income inequality; poverty risk; EU countries; variability; regression analysis

#### ABSTRACT

**Research background:** In some countries, far more commonly than in other regions, the youth are considerably more successful in completing higher education, and adults are eager to raise their competencies even after having finished education. In other regions, the opposite is true, with relatively more young people leaving education early, not working or receiving any training. Are the causes of those disparities in the level and quality of education (EL) attributable to population income inequality (IL)? Or is it perhaps that low levels of education contribute to income inequality and increased risk of poverty among populations?

**Purpose of the article:** The article sought to investigate whether a correlation exists between the level and quality of education (EL) and population income inequality (IL), as well as assess the scale of the variation and trends in this regard, as of before and during the economic crisis.

**Methods:** To assess the issue in question, 16 variables and 27 objects/countries of the European Union were used. The research period covered the years 2012–2021. In order to examine the variability and the trends at play, the coefficients of variation  $V_s$  and  $R$  were calculated. Multivariate analysis of the data was carried out, followed by an exploration of the links between the level and quality of education (EL) and population income inequality (IL) via the method of correlation and multiple regression.

**Findings & value added:** The study has confirmed the existence of a significant correlation between regional variability in the level and quality of education (EL) and population income inequality (IL). The marginalization of certain social groups has intensified even more during the current economic crisis. Substantial correlations persist between countries with high population incomes and the percentage of tertiary education holders and adults furthering their education. In parallel, as the percentage of young people not in education or employment decreases, countries' GDP and income levels rise, while income inequality and poverty risk decrease. Knowledge of the aforementioned interdependencies is vital for the implementation of education policy as one of the biggest levers reducing educational disparities and thus income inequality in the population.

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***Measuring the potential development of sharing economy in the tourism sector from a macro-economic perspective***

*JEL Classification:* L83; O11; O14

*Keywords:* sharing economy; tourism sector; macroeconomic analysis; development

ABSTRACT

**Research background:** The sharing economy has gained increasing importance in the tourism sector, with many consumers using platforms and models based on the sharing economy for travel-related services. However, there is a lack of research on how external macro-economic factors influence the development of the sharing economy in tourism.

**Purpose of the article:** The purpose of this research is to investigate the potential development of the sharing economy in the tourism sector from a macro-economic perspective. The study aims to identify the macro-environment that has a significant impact on the development of sharing economy in tourism and the specific macro-economic factors influencing its demand and supply.

**Methods:** The research employs a comprehensive literature review and empirical analysis to identify the factors influencing the development of sharing economy in the tourism sector. The literature review focuses on the macro-environment that impacts the sharing economy, while the empirical analysis identifies the specific macro-economic factors influencing the sharing economy in the tourism sector.

**Findings & value added:** The findings reveal that the socio-cultural and economic environment have the greatest influence on the development of sharing economy in the tourism sector. The study contributes to the existing literature by providing a comprehensive analysis of the factors influencing the development of sharing economy in tourism from a macro-economic perspective. The results of this research have important implications for policymakers and practitioners.

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### ***Innovativeness of the European Union economies in the context of the modified European Innovation Scoreboard***

*JEL Classification:* O30; O31; O52

*Keywords:* innovation of the economy; innovation assessment; European Innovation Scoreboard

#### ABSTRACT

**Research background:** Innovation is an important determinant of economic development and its importance is growing along with the advancing digitization and the development of the 4th industrial revolution. The assessment of innovativeness of economies, in turn, affects the investment attractiveness and international image of countries.

**Purpose of the article:** Considering the above circumstances, the main aim of the article is to analyze the innovativeness of European economies in the context of the modified European Innovation Scoreboard.

**Methods:** In order to achieve this goal, the authors propose two key modifications to the existing innovation assessment methodology contained in the European Innovation Scoreboard. The first concerns the principles of normalization of assessment indicators in order to eliminate extreme assessment values. The second proposes the removal of difficult to measure, quite subjective and not always feasible indicators relating to sustainable development.

**Findings & value added:** An alternative approach to assessing the innovativeness of the analyzed countries — proposed by the authors — resulted in changes in the ranking of countries in relation to the European Innovation Scoreboard, but they were not significant. Major changes concerned Serbia (down 4 places), Belgium (down 3 places), Hungary (up 3 places) and Poland (up 2 places). In addition, 5 countries moved up one place in the ranking (UK, Netherlands, Luxembourg, Estonia, Slovenia, Spain and Slovakia) and 5 lost one place in the ranking (Norway, Italy, Portugal, Greece and Croatia). There were no changes in 13 countries. The obtained results allow us to conclude that the countries with the best and the worst innovativeness maintain the assessment regardless of changes in the methodology of its implementation. The objectification of rules has the strongest impact on countries in the middle of the ranking.



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### *Governance capacity & public debt in Asian countries*

*JEL Classification: J78; H63; C11*

*Keywords: governance capacity; public debt; Bayesian analysis; Asian countries*

#### ABSTRACT

**Research background:** Recently, with the on-set of the public debt crisis in some countries, public debt management has exerted many issues and yet again at the top of the agenda of policy makers. A large body of literature has investigated the influence of fiscal policies and macroeconomics factors on public debt, with a few that specialize in governance capacity.

**Purpose of the article:** On top of sparse extant research, we empirically assess the potential impact of governance capacity on public debt accumulation in 41 Asian countries over the period 2002–2019. Governance capacity is captured in six components: Voice and Accountability (VA), Political Stability and Absence of Violence/Terrorism (PV), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL), and Control of Corruption (CC).

**Methods:** Our paper is distinct from previous studies which mainly used the frequentist approach. We apply non-frequentist method — Bayesian analysis.

**Findings & value added:** Findings from informative Bayesian linear regressions documented that enhancing the governance capacity in voice and accountability, political stability, regulatory quality, rule of law and control of corruption affects positively on the size of public debt. These results explicitly address that allocating government's budget funds for spurring governance capacity in Asian countries could accelerate the level of public debt. Meanwhile, only government effectiveness indicates negative association with public debt with more effective government could diminish the amount of public debt. For robustness purposes, we change the prior input by laboring uninformative Bayesian linear regression. The results of this paper contribute evidence and crucial implications to policymakers in improving governance capacity in the relation with well-managing public debt.

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***FinTech as a digital innovation in microfinance companies: systematic literature review***

*JEL Classification: I15; Q54; Q56*

*Keywords: Financial Technology; FinTech; digital innovation; microfinance; literature review; VOSviewer*

**ABSTRACT**

**Research background:** The disruption caused by digital technologies is impacting all sectors of the economy inclusive of the financial service industry. Nowadays, there is a high level of competition in the marketplace for all the financial institutions both the major players (Banks) and players in the SMEs' financial service sector such as the Microfinance firms. Despite the volatile business environment, Fintech emergence and its disruptive nature have generated new business models and new markets. It is therefore pertinent for microfinance institutions to recognize digital technology innovation in the space in order to adopt the models in their business strategy to increase their market share as well as promote financial inclusion.

**Purpose of the article:** The main purpose of the paper is to identify the most important directions of research to date and to indicate new, emerging areas of research concerned with application of FinTech solutions in microfinance companies.

**Methods:** A systematic review (based on the publications indexed in the Web of Science and Scopus databases), using selected multidimensional statistical methods, as: correspondence analysis and log-linear model, were applied.

**Findings & value added:** After identification of the main representative and comprehensive standards, the emerging results indicate that standards and certifications in microfinance could be an essential element of Microfinance's business strategy. Indeed, they guide and conduct the financial service delivery, wishing to introduce CE within their knowledge-base sustainability performances, translating into circular benefits for the customers, partners, and enterprise itself.

The added value of the work is the research approach proposed by the authors, which uses advanced methods of multivariate statistical analysis in a systematic literature review. This kind of approach to systematic literature review allows to identify not only existing research directions and areas, but also new research directions just emerging in the analyzed publications.

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### *Spatial and spatiotemporal methods of modeling of the unemployment rate*

*JEL Classification: J8; C4; C5; C9*

*Keywords: spatial econometrics; unemployment rate; spatial modeling; spatiotemporal modeling; EAD*

#### ABSTRACT

**Research background:** The level of the unemployment rate illustrates the socio-economic development of the researched region. The choice of the data modeling method, both in terms of spatial and time-spatial, depends on the results of exploratory data analysis.

**Purpose of the article:** The aim of the research is to investigate what methods of GIS spatial analysis can be used for the cartographic presentation of the variability of the unemployment rate in Poland, broken down into voivodships and poviats in terms of time and space.

**Methods:** Performing an exploratory analysis of data on the unemployment rate in Poland in the years 2004–2022 in order to select the methods of cartographic presentation and transfer in spatial and time-spatial terms with selected cartographic methods in GIS of the level of unemployment in Poland.

**Findings & value added:** Excluding data analysis methods based on statistical tests and examining the distribution of unemployment rate data in Poland by poviats and voivodships in 2004–2022. Selection of optimal methods of visualization and analysis of spatial data.

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***Management and leadership strategies for transforming workplaces and office markets derived from a mixed method approach***

*JEL Classification:* C83; M12; R39

*Keywords:* leadership strategies; user behavior; transforming workplaces; office real estate market; home office

ABSTRACT

**Research background:** During crisis situations such as the COVID-19 pandemic and the current war between Russia and the Ukraine, a change in user behavior and user requirements could be observed. The German office real estate market is challenged by many other trends and developments such as the increasing trend towards telecommuting, shared spaces and the fundamental pursuit of socially responsible and sustainable investments.

**Purpose of the article:** The aim is to identify the factors which most strongly influence the German office real estate market and to investigate the way how real estate firms apply to the changing market by adapting their leadership strategies.

**Methods:** By means of a mixed method approach, the complex real economic research problem is addressed. A total of three groups of persons are identified: users of office real estates, employees in corresponding real estate companies and executives in this industry. A quantitative approach is used to depict the requirements and needs of office real estate users in the current market environment and the approaches taken by management to address these changes. The approach is completed by a qualitative presentation of the perspective of executives in this environment, based on standardized expert interviews.

**Findings & value added:** The findings show a comprehensive analysis of the market development concerning office real estates in Germany and the changes regarding user, management and leadership behavior and strategies. Influencing factors that have changed the market segment in recent years are identified. The linkage between changes in the real estate market and company-related change management in terms of leadership approaches can be shown.

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### *Model of the impact of intangible resources on the competitiveness of enterprises*

*JEL Classification:* C31; E22; L22; O34

*Keywords:* soft model; intangible resources; competitiveness; enterprise

#### ABSTRACT

**Research background:** The complexity of the phenomenon of competitiveness among contemporary enterprises implies the legitimacy of searching for sources of competitive advantages beyond traditional success factors. The concepts of enterprise competitiveness have evolved from classical economics to the present day and theories with a practical purpose such as: the theory of five forces by M.E. Porter and the theory of key competences by G. Hamel and C.K. Prahalad. Nowadays research on the phenomenon of the competitiveness of enterprises seeks answers to the following questions: what is the role of intangible resources in being competitive on the market and what types of intangible resources are the most important from the point of view of the research?

**Purpose of the article:** The aim of the article is to examine the strength and direction of the impact of intangible resources on the competitiveness of listed companies. The article presents a theoretical model of the impact of intangible resources on the competitiveness of listed companies. The case study used for the empirical verification of the constructed model will be joint-stock companies from the Warsaw Stock Exchange selected according to the criteria defined in the article. Statistical data of the tested objects from 2018 and 2021 will be implemented in the model in order to analyze its stability.

**Methods:** To achieve the aim of the article, the PLS-SEM method of modeling structural equations was used, which allows for the study of relationships between directly unobservable variables. The model consists of two parts: a structural (internal) model and a measurement (external) model. These models are also used in the parameter estimation process — they are interrelated. Two unobservable (hidden) variables were adopted in the constructed model: intangible resources (IN) and competitiveness of companies (CC). Hidden variables were defined based on a potential set of indicators (observable variables).

**Findings & value added:** The specification of the PLS-SEM model will make it possible to determine the strength and direction of the impact of intangible resources on the competitiveness of listed companies, based on the theory of key competences. Identification of the most important variables among intangible resources shaping the competitiveness of enterprises will contribute to the determination of theoretical conclusions and practical recommendations for listed companies in Poland.

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### *The role of innovative systems in a small and medium enterprise*

*JEL Classification:* O36; L25; L36

*Keywords:* innovation; innovative activities; small and medium enterprises; competitiveness

#### ABSTRACT

**Research background:** The considerations contained in the article concern the issues of innovation in information systems of small and medium-sized enterprises. The results of the research on barriers faced when introducing innovation in the surveyed economic entities were presented. The focus was on the analysis of internal financial barriers.

**Purpose of the article:** The purpose of the article is to identify and analyze the internal barriers resulting from the implementation of innovative information systems and their impact on the management of small and medium-sized enterprises.

**Methods:** The method of social research using a questionnaire and quantitative methods were used. The research was carried out in enterprises belonging to the SME sector, with particular emphasis on those operating in the Silesian Province. The analysis of the results concerning the relationship between the variables was then presented.

**Findings & value added:** The results of the analysis indicate that the dominant innovations in information systems implemented in the surveyed enterprises are innovations in the area of information systems supporting finance and accounting. The identification of the barriers to their introduction has made it possible to define the actions that should be taken at the level of both the enterprise and the economy in order to overcome them.

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### *Precautionary cash holding by consumers and risk-taking behavior*

*JEL Classification: D12; D81; D91; E41*

*Keywords: demand for money; risk-taking; electronic payments; cashless; risky behavior*

#### ABSTRACT

**Research background:** Recently, the increasing use of non-cash payments has been accompanied by a growth in the demand for cash. This paradox is difficult to explain if only the payment function of money is considered. An extensive literature exists that considers consumer preferences regarding the choice between electronic versus cash payments. Only a few studies have been interested in why economic agents hold cash despite choosing electronic payments for transactions.

**Purpose of the article:** Recent literature considers mainly the payment function of cash and the store-of-value function of cash. We would like to go beyond this dual framework and we instead focus on the demand for cash from the precautionary motive. We study the relevance of several factors behind cash holding by consumers who have decided to use electronic payments.

**Methods:** We consider to what extent precautionary cash holding by consumers depends on risk-taking behavior and other psychological factors, such as the perceived risk related to electronic payments and various dimensions of the perceived attitudes towards cash as an alternative to e-payments. We use a unique database of Polish consumers.

**Findings & value added:** Key determinants of deciding to hold cash in our study include: risk-taking behavior and such perceived attitudes towards cash as personal freedom and cybersecurity related to the lack of exposure to cyber attacks. According to our research, consumers attach great importance to the personal freedom and flexibility that cash gives as an additional option to electronic payments.

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***Opportunities and threats of economic stabilization policies during the COVID-19 pandemic: an empirical study of the European Union***

*JEL Classification:* C10; E62; F44

*Keywords:* economic shocks; economic stabilization policy; COVID-19; European Union

ABSTRACT

**Research background:** Although the COVID-19 pandemic caused unprecedented economic shocks around the world, the impact of this economic dysfunction in the European Union was less than anticipated. One of the key reasons for this was the EU's immediate economic stabilization policy (ESP) response, which provided good support to businesses and workers with short-term work schemes, as well as firms with substantial liquidity support. Yet none of the 27 member states of the European Union achieved the same levels of economic growth and stability.

**Purpose of the article:** Considering that economic growth and stability are closely related, the evaluation of economic stabilization policies (Opportunities and Threats) and their effectiveness in the EU will not only fill the empirical research gap related to the revision of ESP adopted during this period but also provide further recommendations to achieve more effective economic stabilization policy measures in the future.

**Methods:** In this study, we will first review the recent literature on ESP and its effectiveness in the EU during the COVID-19 pandemic with statistical analysis. Secondly, we will cross examine and compare the performance of ESP with the last 20 years of data, from 2002–2022, to get a clear footprint based on basic macroeconomic indicators such as GDP, consumer prices, employment rate, inflation rate, interest rates, level of debt, public expenditure, fiscal deficit, trade deficit, and the human development index (HDI) by using the stationarity test, Granger causality test, and autoregressive distributed lag model (ARDL).

**Findings & value added:** The findings indicate the necessity of revision and reformation of ESP through a cross-examination of their effectiveness and cyclical, such as explicit mandates, long-term predetermined alignment among the 27 member states of the European Union, and so on, to build up more stabilized economic policies for the future.



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### *Examining the link between ESG ratings and stock returns*

*JEL Classification: O16*

*Keywords: ESG ratings; stock returns; crisis; pandemic; S&P500*

#### ABSTRACT

**Research background:** The background of this research is based on the comparison of two of the most crucial events in history from an ESG point of view and the link between ESG ratings and stock returns.

**Purpose of the article:** We want to analyze the most significant events in stock returns during two major crisis of all time, the 2007–2008 financial crisis and the pandemic crisis, and to examine the link between ESG ratings and stock returns during this period of time.

**Methods:** In order to be able to examine the connection between ESG ratings and stock returns, as a next step in the analysis of the influence of ESG factors on stock returns, the S&P500 index and the ESG scores related to the index, analyzed both as a general score, but also analyzed on the three pillars, are to be examined what make it up. The analysis is based on quantile regression.

**Findings & value added:** In crucial times, the ESG ratings and not as strong and valuable to the stock returns of the S&P500 as we might expect from similar studies. Compared to 80% of other authors studies, we have find out that investors and policy makers can use this results for making more sustainable decisions for their companies and to build better environments in order to grow their capital.

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### *An attempt to measure the effectiveness of the university brand*

*JEL Classification: M3; B4; I2*

*Keywords: university's brand; synthetic measure; TOPSIS-CRITIC*

#### ABSTRACT

**Research background:** The designation of the university's brand is a very important element of the university's marketing strategy. The consequence of designating the brand should certainly be actions leading to the improvement of the university's brand and a properly targeted advertising campaign. The effect of these activities is to be greater interest in studies in a specific field of study at a specific university.

**Purpose of the article:** The motivation mentioned above contributed to defining the purpose of the analysis as an indication of an analytical tool supporting the building of the university's brand value. The implementation of the adopted goal should provide a tool supporting undertaking activities aimed at creating the university's brand by leaders managing education at the level of universities. As a research hypothesis, the assumption was made that it is possible to determine the university's brand by using a synthetic measure of the university's brand value.

**Methods:** CRITIC-TOPSIS

**Findings & value added:** The main contribution of this article to science is the indication of variables that have not previously been used to determine the university's brand and which occur in IT systems related to the functioning of universities, so they can be used to support a more objective determination of the university's brand value. The analytical method used and the analyses carried out on its basis showed that synthetic measures can support the creation of a university brand. However, the very construction of a synthetic measure of the university's brand value that reflects reality requires the introduction of additional variables from IT systems and variables resulting from properly constructed surveys in the field of determining the university's brand value.

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### *Energy crisis and companies' investment in renewable energy sources: case of metal processing cluster*

*JEL Classification:* D22; D25

*Keywords:* energy crisis; renewable energy sources; companies' investment; metal industry

#### ABSTRACT

**Research background:** Improving the energy efficiency of enterprises is now not only a postulate of international and national energy transition strategies towards climate neutrality, but also a requirement for maintaining their profitability and competitive capacity. Rising energy fuel prices and the unstable geopolitical situation, and above all, the war in Ukraine, are causing many enterprises to take energy-saving actions (ESA's). One of them is investing in renewable energy sources (RES) for their own consumption, understood as investing in future energy purchase savings.

**Purpose of the article:** The article aims to identify the involvement of enterprises affiliated with the Metal Processing Cluster (MPC), which has the status of a Polish Key National Cluster, in RES investments in the context of the energy crisis. It also attempts to verify the hypothesis: greater interest in investing in RES is shown by enterprises that have seen a strong negative impact of energy price increases on their operations.

**Methods:** The research was carried out on the basis of literature studies, analysis of Polish Central Statistical Office statistical data and analysis of reports of various institutions. Empirical verification of the hypothesis was possible on the basis of the results of surveys conducted in the enterprises of the MPC.

**Findings & value added:** The research showed that in 2022, more than half of the surveyed companies affiliated with the MPC felt the negative (very strong and strong) effect of rising energy prices. It primarily had an impact on the decline in their profitability. In 54% of the surveyed companies, this situation influenced the decision to start investments in renewable energy sources, with the majority of these investments being in photovoltaic panels. The survey contributes to the knowledge of the impact of the energy crisis on RES investments in metal companies.

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*Predictors of attitudes and intention to purchase local food in direct sale in Poland: a modeling approach*

*JEL Classification: A14; D10; M3*

*Keywords: consumers; purchase intention; conceptual model; local food*

ABSTRACT

**Research background:** As part of the sustainable development policy, many countries undertake measures to stimulate the increase in the supply and demand for local food. Ample studies have emphasized that the production and distribution of food in the local food system entails beneficial economic, social, environmental, and even health effects. The works presented in the literature relating to this category of food provide only a few model concepts showing important variables that explain the attitudes and behaviors of consumers towards local food. Given the existing knowledge gap exploration in this area seems to be important.

**Purpose of the article:** The aim of this study was to identify predictors relevant to the attitudes and intentions of consumers purchasing local food.

**Methods:** The conceptual research model showing the predictors of attitudes and purchase intentions was verified using the results of a quantitative survey conducted using the face-to-face technique among consumers purchasing local food in direct sales (n=850). Data from the quantitative survey was statistically analyzed using the Statistica 13.3 program, based on multivariate linear regression analysis.

**Findings & value added:** According to the models developed product attributes, attachment to tradition, ethnocentric beliefs and awareness of environmental issues related to food production were proven to be predictors of both consumer attitudes towards local food purchased at markets and intentions to purchase local food in case of increased availability. Additionally, it was found that negative attitudes towards conventional foods can determine positive attitudes towards local foods. In contrast, it was found that attitudes towards local foods and purchase intentions could not be predicted on the basis of consumers' health-promoting attitudes. The results obtained in this study are a valuable source of information for producers and entities working for the development of local food systems and can be deployed in the design of marketing communication.

Part of the research presented in this article was carried out as a results of the author's internship co-financed by the European Union under the European Social Fund (Operational Program Knowledge Education Development), carried out in the project Development Program at the University of Warmia and Mazury in Olsztyn (POWR.03.05. 00-00-Z310/17).

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### *Reasons for not filling vacancies: case study of the Employment Service of the Republic of Lithuania*

*JEL Classification:* J62; J63

*Keywords:* job vacancies; job registration; Employment Service of the Republic of Lithuania

#### ABSTRACT

**Research background:** the consequences of COVID-19 are especially felt when analyzing the Lithuanian labor market: one of the main indicators of exclusion is long-term unemployment which jumped to the top, as much as 41.9%. All clients of the Employment Service are the long-term unemployed. The integration of the long-term unemployed into the labor market after the pandemic period will be one of the main challenges for the authorities. The idea of the scientific research comes from the unfavorable situation in the labor market, which is whitewashed by the COVID-19 crisis. On the one hand, there is high unemployment (the number of long-term unemployed has increased by 3,000 since the start of the pandemic), on the other hand, there are unfilled jobs (38.9% more than in 2020), and high social exclusion (20.6% of the population lives in below the poverty line) and modest social support (the basic amount of social support is 40 eur).

**Purpose of the article:** having analyzed vacant jobs in Lithuania that have not been filled for 50 days or more in the biggest cities of Lithuania, to identify the reasons why not all employers register all jobs on the website of the Employment Service of the Republic of Lithuania to advertise vacancies.

**Methods:** Analysis of scientific literature, survey of employees of the Employment Service of the Republic of Lithuania, analysis of statistical data.

**Findings & value added:** the results of the study allowed us to identify the main reasons for the incomplete use of the website of the Employment Service of the Republic of Lithuania among employers: employers find employees through private career portals (e.g. CV.lt), they find employees through advertisements in the media or other forms of media. The analysis of statistical data revealed that for the most in-demand professions, such as electricians, plumbers, international freight transport drivers, broad-profile builders, carpenters, programmers and tailors, the examined advertisements indicate 2–3 times lower wages compared to the average wages of these professions in the labor market (as of 2021). The analysis of the most unpopular advertisements revealed that job positions for the driver of an international freight transport vehicle were announced the most in the period of 50 days and more. Due to the difficult and stressful job specifics, the wages in the analyzed advertisements were too low.

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### *Labour market amid Ukraine war shocks: Poland case study*

*JEL Classification:* J01; J08; E02; E24

*Keywords:* labour market; job vacancy; unemployment; Ukraine war; Poland

#### ABSTRACT

**Research background:** War in Ukraine significantly influences global economy. Enterprises generate growing production cost including rising cost of capital and additionally meet the wage pressure. Following the beveridge curve concept describing relation between job vacancy and unemployment it is worth studying what are the tendencies in terms of number of job vacancies and how it influences the level of unemployment.

**Purpose of the article:** The aim of the article is to identify the influence of Ukraine war on the labour market exemplified by Polish case study. The main goal is to analyse the opinions of enterprises managers in terms of their willingness to provide job vacancies. The share of job openings declared by the business representatives was correlated with the change in unemployment rate in Poland.

**Methods:** Quantitative research was conducted among 500 Polish enterprises differentiated by the number of employees (micro, small, medium, large) and by the industry represented (construction, trade, production, transport, services). On the basis of monthly measurements, after the outbreak of war in Ukraine, during the period of March–December 2022, information was received from enterprises on their plans related to employment, including Ukrainian workers (primary data). Statistical methods were used to analyze the dynamics and structure of data gathered from enterprises. Additionally, secondary data available from public databases was analysed.

**Findings & value added:** Research results show that from March to July 2022, more employers wanted to hire than to fire employees. Large shortages of workers occurred in construction, production and transport. These are industries in which many Ukrainian men were employed before the war. From August to December there was observed a different situation, more employers are planning to lay off than to hire workers. However, for the short run decreasing job vacancy does not influence the level of unemployment in Poland.

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### *In search of key determinants of innovativeness in the regions of the Visegrad Group countries*

*JEL Classification:* O31; O32; R11

*Keywords:* determinants of innovativeness; R&D expenditure; patent applications; trademark applications; NUTS-2 regions of the Visegrad Group countries

#### ABSTRACT

**Research background:** The COVID-19 pandemic has had a huge impact on the functioning of societies and economies. Discussions on the state of the economy in times of crisis focus not only on maintaining or improving innovativeness but also on the emergence of new dimensions of this phenomenon and changing the significance of individual determinants of innovativeness. Therefore, this paper is an attempt to answer the question of whether the COVID-19 pandemic has affected the key determinants of innovativeness. Innovativeness is a complex, multidimensional and difficult to measure phenomenon, which implies the need to select various indicators and methods for its assessment. Synthetic measures of innovativeness are widely used in comparative analyses, in particular presenting results in international or interregional cross-sections. The degree of innovativeness should also be assessed at different levels of economic aggregation. The lower the level of aggregation, the easier it becomes to capture the specific determinants of the increase in innovativeness of a given area.

**Purpose of the article:** The main aim of the paper is to attempt to measure the relationship between expenditures and results of innovative activities for NUTS-2 regions of the Visegrad Group countries. Three variables were adopted as measures of innovation: PCT patent applications per billion GDP (in PPS), trademark applications per billion GDP (in PPS) and public-private co-publications per million population.

**Methods:** The study covered 37 NUTS-2 regions of the Visegrad Group countries in the years 2014–2021. From the point of view of the purpose of the paper and the need to search for the relationship between expenditures on innovative activity and the results of this activity, it is worth emphasising that the use of static and dynamic econometric models proved to be a substantively correct solution leading to the formulation of clear conclusions.

**Findings & value added:** The conducted research confirmed that business R&D expenditure on GDP has a positive effect on inventions expressed by patents and trademarks, especially in the long run. In addition, the literature review and empirical analyses indicate that the main determinants of innovativeness (both before and during the pandemic) are the expenditures of economic entities on R&D, competences expressed by the level of education or participation in tertiary education, as well as the number of ICT specialists and the percentage of people employed in science and technology. Despite the deterioration of many macroeconomic indicators in the countries of the Visegrad Group, the expenditures of the business sector on R&D in most regions did not decrease in the pandemic period, between 2019 and 2021.

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### *Influence of financialization on the business activity of non-financial enterprises in Poland*

*JEL Classification:* G32; G01; F65; G12

*Keywords:* financialization; non-financial enterprise; statistical analysis; sectoral analysis; analysis by size of enterprises

#### ABSTRACT

**Research background:** Financialization is connected with the phenomenon of dominance of the financial sphere in relation to the real sphere. Financialization, when applied to non-financial entities, means the increase of importance of financial motives in the decision-making processes of enterprises. Shareholders (owners) expect constant and dynamic increase of company revenues thanks to the stock market. Enterprises try to meet the shareholders expectations. For that purpose, they use leverage and financial instruments to generate profit, limiting the operational and investment activity.

**Purpose of the article:** The aim of this paper is to assess whether financialization processes influenced the business activity of Polish non-financial entities. Moreover, an attempt was made to answer the question if these processes apply equally to particular industries and enterprises according to their size.

**Methods:** In the research the following methods were used: indicator analysis, trend analysis, Pearson's correlation coefficient. Moreover, tests of significance of differences were carried out, respectively for the groups of enterprises under analysis; for groups of large companies and the SMEs sector: the Welch test and Mann–Whitney U test, and for the sectors: ANOVA Kruskal–Wallis tests and post-hoc tests. In the research the financial statements of non-financial enterprises published by the Statistics Poland (GUS) for the years 2010–2021 were used, considering the classification of data according to the industry and criterion of size (number of employees).

**Findings & value added:** The originality of the article is connected with a multi-faceted analysis of the financialization of enterprises, from the point of view of investment activity (assets), sources of financing (liabilities), income and management. The added value of the paper is also a comparative analysis of the degree of financialization of companies' activities by industry and by size.



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***Barriers to immigrant entrepreneurship: a causal relationship analysis of the Asian immigrant entrepreneurs in Germany employing the DEMATEL approach***

*JEL Classification: C40; F22; J60; L26*

*Keywords: immigrant entrepreneurship; causal relationship; immigrant barriers; DEMATEL method*

ABSTRACT

**Research background:** Entrepreneurship and migration are top priorities on many national and international agendas. As a result, one of the most popular strategies used by immigrants to avoid unemployment in a host country is entrepreneurship. However, studies are lacking to discuss causal relationships among key barriers to immigrant entrepreneurs.

**Purpose of the article:** This study aims to fill the gap and analyze the causal relationship between the main barriers to Asian immigrant entrepreneurs in Germany.

**Methods:** The study was carried out by conducting face-to-face interviews with Asian business owners in Germany using a predesigned questionnaire, and using the Decision-Making Trial and Evaluation Laboratory (DEMATEL) approach to analyze the data.

**Findings & value added:** The results show that lack of sufficient capital to establish a business, high market competition, and unfamiliarity with the host country's local language are the most priority barriers among others that may severely hamper Asian immigrant business performance and have a significant impact on their entrepreneurial decision. While lack of professional knowledge & skills, problems with rules & regulations, and cultural differences are among the lowest prioritized barriers to Asian immigrant entrepreneurs. The findings show that unfamiliarity with the local language, problems with rules and regulations, cultural differences, and lack of international business experience are associated with the causer category. However, lack of enough capital to establish a venture, lack of professional knowledge and skills, difficulty in access to loans, and high competition in the market have a relation to the receiver category. This research generates value for policymakers, particularly those who participate in migration studies. One of the study's novelties is the use of the DEMATEL framework for decision-making on barriers to immigrant entrepreneurship in the European context.

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### *Employee reflections on working from home during and beyond the coronavirus pandemic*

*JEL Classification: M10; M12; M50*

*Keywords: covid-19; home working; labor market; workforce flexibility*

#### ABSTRACT

**Research background:** Due to the introduction of anti-coronavirus measures, working from home has almost overnight become a normal work pattern for many employees around the world, no matter if they wished it or not. For some it was a completely new experience, for others it was a familiar matter. In any case, the coronavirus pandemic has accelerated the implementation of home working arrangements and has raised questions about their effective use beyond the coronavirus pandemic.

**Purpose of the article:** The article deals with employee experience with working from home arrangements during the coronavirus pandemic to discuss possible directions and challenges of further use of working from home arrangements beyond the coronavirus pandemic.

**Methods:** The discussion is founded on a survey of 482 employees of various professions who experienced working from home during the coronavirus pandemic. The survey was executed by authors from December 2021 to September 2022.

**Findings & value added:** The findings suggest that most of the surveyed employees wish to keep part-time working from home arrangements, although, in addition to enjoying work-life balance or cost and time savings, they also have to address some of the social and technical issues of working from home arrangements. The desire of employees to work from home depends mostly on their professions and individual skills and needs.

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### *The scope of fiscal decentralisation in European Union countries: a comparative analysis*

*JEL Classification:* H71; E62; H50

*Keywords:* decentralisation; public finances; public expenditure; European Union; fiscal decentralisation

#### ABSTRACT

**Research background:** Decentralization is one of the main challenges in public sector reform. In democratic countries the level of decentralisation in individual countries is not identical. The varying scope of decentralization affects the quality, quick and efficient decision-making by public leaders.

**Purpose of the article:** Comparison of the extent of fiscal decentralisation in EU Member States; creation of groups of states with similar levels of decentralisation; identification of characteristics of countries where the average level of decentralisation is similar.

**Methods:** The method of hierarchical cluster analysis was used. In order to create the distance between the studied objects, the Euclidean distance method was used. In order to determine the groups, the "Ward.d2" method was used. In order to determine the cut-off point of the optimal number of groups for each year, the Gap Statistic value analysis was used.

**Findings & value added:** As a result of the study 4 clusters were created. The first includes centralized countries (small area, small population, e.g. Malta, Cyprus). The level of decentralization is a little bit higher in federal states and most of the countries that joined the EU in 2004 or later (cluster 2, the most numerous). Larger and more numerous countries are characterized by a higher level of decentralization (cluster 3, e.g. Italy, Poland, France). Clusters 4th is composed of the Nordic countries: Finland, Sweden and Denmark, i.e. in countries where a welfare state model with an extensive public sector has been implemented. As a result, it was found that the level of decentralization is related to the size of the country, population and political system. Changes in the structure of the state or its political system in order to improve the quality of policy should take into account these three variables.

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***Application of the innovation strategies characteristics under the impact of internal and external environment threats***

*JEL Classification: F63; L1; O11*

*Keywords: strategy; characteristics; threats; types; kinds; economic development; specific features of innovation activities*

**ABSTRACT**

**Research background:** The article is concerned with interpretation of the essence of the innovation strategy concept given the impact of environmental factors in order to meet the interests of all parties concerned, with the author's definition of this concept suggested. Nowadays, it is the strategies of innovative development or innovation strategies that is a premise for the economic growth not only of industrial enterprises but also of the state as a whole; they shall contribute to the growth of the population living standard, improvement of welfare, technical development, national security, gaining advantages over competitors. The relevance of the problem is caused by the fact that enterprises are experiencing difficulties and have low development indices, and the development of any enterprise is associated with the use of innovation strategies that will allow solving a number of urgent problems and help to stabilize innovation activity.

**Purpose of the article:** Article is deepening of the theoretical foundations for the classification features and characteristics of the strategy of innovation activity of enterprises and their impact on economic development given the threats of the internal and external environment.

**Methods:** Analytical study.

**Findings & value added:** The strategy of innovation activity is of significant importance for the enterprise's development and allows solving crucial problems and completing major tasks. At the same time, it is impossible to apply a particular innovation strategy if the enterprise is at the initial stage of its activity and only applies the general strategy. On condition of introduction of technology, and establishment of the level of economic security at the enterprise, there is a possibility of using the innovation strategy, which also depends on the economic and political situation in the country, position of the enterprise in the market, its investment and innovation potential, availability of modern equipment, type of products, methods of protection against threats and level of competition.

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### *Do LGUs' non-financial support instruments matter to new firms formation?*

*JEL Classification: H10; H30; L26*

*Keywords: entrepreneurship support instruments; local government; development support policies*

#### ABSTRACT

**Purpose of the article:** The main goal of article is to find out which of the non-financial entrepreneurship support instruments used by local government units (LGUs) in Poland effectively support new firms formation.

**Methods:** The study was conducted at two time points (i.e. in 2015 and 2019), illustrating the entrepreneurship support policies implemented during subsequent local government terms. We use a large set of survey data for a representative sample of 731 communes (i.e. nearly 1/3 of all LGUs in Poland), taking into account the generic category of the surveyed local governments (i.e. the status of a rural commune, urban-rural commune, urban commune and city with poviat rights).

**Findings & value added:** The collected data is unique. The research conducted so far has not been based on such a large sample or on such a wide range of questions diagnosing public policies of supporting entrepreneurship at the local level. The research proved that non-financial instruments at the disposal of communes are effective in the processes of stimulating entrepreneurship. The effects of their implementation are conditioned by the generic category of the LGUs, the quality of the institutional environment as well as the involvement of local actors in the process of designing development policies. The research proved that the highest effectiveness of non-financial instruments was noted in relation to cities with poviat rights, which confirms inability to treat individual instruments as universal tools, independent of the specificity of the local government unit applying it.

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### *The architectural factors and the unexplained variance in the housing market*

*JEL Classification: R31; R32; D46*

*Keywords: real estate market value; housing market; architectural factors; hedonic models; spatial dependency*

#### ABSTRACT

**Research background:** The research focuses on the housing market value variance across space inside a city at the fixed moment in time. A significant amount of the housing market value cannot be explained by usual hedonic models. This variance could be referred to as spatial dependency of the housing market value, however, there is no clear answer what attributes of different spaces or locations inside a city cause the differences in the market value. Therefore, on the one side, we have the unexplained variance across space, on the other side, we have the built environment and architecture which inevitably varies across space as well.

**Purpose of the article:** The scientific problem is how to evaluate the influence of the architectural variables on the unexplained variance of the housing market value. The aim of this research is to develop an identification strategy for measuring that influence.

**Methods:** The research starts with hedonic models and tries to add architectural factors. The classification and systematization of the architectural factors are required. Non-design and design factors are positioned in the context of this research. Regression analysis is used to measure the relationship between the architectural factors and the housing market value.

**Findings & value added:** Non-design architectural factors contribute up to 15% of variance inside a project. Different spaces or locations contribute up to 37% of variance inside a city. There is a relationship between the design factors and the housing market value, however, the statistical significance of individual factors is yet to be explored.

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### *Equity crowdfunding IPOs in Poland: under or overpricing?*

*JEL Classification: G11; G23; G41*

*Keywords: equity crowdfunding; crowdfunding; IPO underpricing; IPO overpricing; start-up; NewConnect*

#### ABSTRACT

**Research background:** The majority of research on equity crowdfunding concerns its evolution in developed countries. There are still relatively few works in English devoted to equity crowdfunding in developing regions, including Poland. Taking this into account and the lack of research (to my best knowledge) on the effectiveness of ECF-based IPOs, there is a research gap that this article is trying to fill in. This paper contributes to the extensive literature dealing with the occurrence of the IPO underpricing phenomenon and focuses on a regional study on IPO underpricing in the still niche ECF-based IPOs.

**Purpose of the article:** The article aims to show the development of equity crowdfunding in Poland. The article also aims to (i) analyze the effectiveness of debuts of companies that raised funds (and thus carried out their IPOs) using ECF platforms, and (ii) find the determinants of ECF IPOs performance.

**Methods:** The model for testing the potential determinants of ECF-based IPO performance is based on univariate linear regressions measuring the relationship between a dependent variable which stands for ECF-based IPO underpricing and one independent variable (chosen from a set of potential explanatory variables).

**Findings & value added:** The article shows that since 2020 equity crowdfunding has become an important source of financing for listed SMEs in Poland. Based on the stylized fact on the risk-return tradeoff, it is assumed that ECF-based IPOs are more underpriced than IPOs of other companies to attract investors. The paper revealed that the effectiveness of ECF-based IPOs has mainly the cyclical nature and it depends on the stock price cycle. ECF-based IPOs are more underpriced than other IPOs only in the bull market while in the bear market they are more overpriced.

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***Uncovering the truth: exploring the veracity of financial data published by European IPO companies through the application of Benford's Law***

*JEL Classification:* G34; G32; G23

*Keywords:* earnings quality; financial reporting; earnings management; initial public offering; Benford's Law

ABSTRACT

**Research background:** The information asymmetry faced by companies going public creates a shared concern about the ability of privileged stakeholders to exploit the temptation to inflate accounting numbers. The reliability of financial information disclosed by companies planning to go public has long been under debate, and earnings management has been a central issue in this debate.

**Purpose of the article:** The aim of the study is to examine the credibility of financial statements reported by IPO companies in the EU-regulated stock markets. The study investigates whether the financial figures reported by IPO companies follow the distribution implied by Benford's Law.

**Methods:** Benford's Law is a statistical tool used to detect potential fraud or manipulation in numerical data. The rationale for testing the reliability of financial results reported to the public is that fraudulent, intentionally altered, or manipulated data will exhibit digit frequencies inconsistent with the expected digit proportions according to Benford's Law.

**Findings & value added:** The study showed moderate evidence that companies tend to increase their reported earnings when they go public. While the digits published in the financial reports of IPO companies generally followed Benford's Law, there were statistically significant deviations from the theoretical distribution for some key digits, particularly 0 and 9 in the second position. This suggests deliberate efforts to align figures in financial statements with specific stakeholder expectations. By providing insights into stock market behavior during events where financial information is likely to be manipulated, the study enhances the financial reporting quality literature. It does so by employing Benford's Law, an alternative method to accruals analysis, to evaluate the reliability of financial statements.



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### *The role of culture in economic development: regional perspective*

*JEL Classification: A14; E02; E71; H41; O11; Z10*

*Keywords: cultural sector; economic development; economic growth; cultural institutions*

#### ABSTRACT

**Research background:** The impact of cultural factors on the economic development has been analyzed in recent years. This role concerns its influence on the labor market, the growth of innovation and creativity, participation in creating added value of GDP, stimulating exports, but the cultural sector affects also the development of tourism, entertainment and improving the quality of residents' lives. The cultural sector is currently treated as a long-term economic investment which affects the development of the country.

**Purpose of the article:** The aim of the article is to evaluate functioning of the cultural sector in Poland. This assessment was made on a regional basis.

**Methods:** To achieve the purpose data of the GUS (Central Statistical Office in Poland) were analyzed. The data concerned on expenses for culture and national heritage – they included individual types of cultural institutions and number of cultural sector entities between 2018–2021. The analysis of data on expenditure on culture and national heritage was carried out in one-dimensional and two-dimensional terms.

**Findings & value added:** It was noticed that development of the cultural sector in Poland is uneven, concentrated in the country's capital, which is typical for less developed countries. Therefore indicated on main barriers of cultural sectors development in Poland. The most important are: underfunding, lack of systemic solutions to support the demand for cultural goods, unfavorable legal and financial conditions for creators of culture, lack of support for cooperation between public and private cultural sector, dependence of the development of the cultural sector on politics, as well as lack of social acceptance of the cultural policy.

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### *Financial speculation impact on dairy commodity price movements: an investigation of US dairy commodity markets*

*JEL Classification:* C58; G13; Q02

*Keywords:* financial speculation; dairy commodity futures; return volatility; commodity futures markets

#### ABSTRACT

**Research background:** In light of recent price volatility and surges in agricultural commodities, the study investigates whether financial speculation destabilizes commodity prices. The study focuses in greater depth on US dairy futures markets, which are relatively new compared to other agricultural commodity markets and less explored by other authors in their research. However, these instruments provide market risk management opportunities for both dairy producers and manufacturers, and these risks are especially important during times of economic turmoil. The weekly returns on futures contracts from the Chicago Mercantile Exchange for nonfat milk, butter, milk class III, and cheese are used in the study.

**Purpose of the article:** In the context of the post-2020 economic turmoil, conduct an empirical study to assess the impact of financial speculation on the prices of dairy products on US commodity markets.

**Methods:** The study employs methods of time series analysis, including the Augmented Dickey Fuller (ADF) test, the Granger non-causality test, and the generalized autoregressive conditional heteroskedasticity (GARCH) method.

**Findings & value added:** The results of our analysis indicate that financial speculation, modeled as an exogenous factor, either has a weak effect or, in some cases, even reduces the volatility of dairy futures prices, despite the fact that selected commodities became more volatile in terms of return volatility during the post-2020 time period. This proposes that there is no causal link from the rise in non-commercial market participants (speculators) to the increased volatility of dairy commodity prices, or that the link is the opposite, so that an increase in non-commercial market participants helps to distribute price risks and is related to higher liquidity in these markets.

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*Would it have been cheaper to let them become unemployed: costs and benefits of First Aid intervention for companies in Slovakia during the COVID-19 pandemic*

*JEL Classification: C5; E24; J08; J64*

*Keywords: active labour market policy; unemployment; COVID-19 pandemic; cost-benefit analysis; financial impacts*

ABSTRACT

**Research background:** The Covid-19 pandemic, which started in the first quarter of 2020, brought many consequences for companies, which had to reduce or close their operation. Without the state's financial help, many companies were forced to lay off their employees. In Slovakia, the intervention program First Aid was introduced in April 2020, and during the two years of its functioning, more than 176 thousand business entities were supported by almost 2.5 billion euros. The amount was used for more than 5.5 million monthly wages for almost 800 thousand employees.

**Purpose of the article:** In this paper, we quantify the impact of the First Aid intervention program during the COVID-19 pandemic on unemployment in selected sectors, with an emphasis on the financial aspect. Based on the analysis results, the recommendations for measures to mitigate the impact of the pandemic or another unusual situation on unemployment are formulated.

**Methods:** The financial consequence of the First Aid+ intervention program in Slovakia on the state budget are quantified by the counterfactual approach by comparing the costs of unemployment and the benefits of maintaining employment in selected sectors.

**Findings & value added:** The cost-benefit analysis revealed a significant impact of introduced and released measures on the development of unemployment in selected sectors, and the national project First Aid+ had a positive impact on reducing state budget expenditures with every job maintained.

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### *Competitiveness of the Polish food sector against the background of other new European Union member states*

*JEL Classification: F14; L66; Q17*

*Keywords: foreign trade; competitiveness; food; Poland; new EU member states*

#### ABSTRACT

**Research background:** The enlargement of the European Union, which means the accession of ten countries (including Poland) in 2004, two in 2007 and one in 2013, has significantly changed the terms of trade both within the EU and with non-member countries. EU membership also fundamentally changed the economic conditions for food producers from the new member states (NMS) and gave a new, very strong impulse to trade in food products.

**Purpose of the article:** The aim of the research presented in the article is to assess whether the new trade conditions resulting from the accession to the EU had a significant impact on the dynamics of trade turnover and the competitiveness of the food sector in Poland and other new Member States.

**Methods:** The following indicators were used in the analysis: relative trade advantage index (RTA) and the Lafay trade balance index (TBI). The combined presentation of these indicators was used to build a matrix that allows a synthetic assessment of the competitive position of individual countries in the trade of specific product groups on the world market. The analyzes covers the years 2004–2021. The data source was the WITS-Comtrade trading database, in which trade flows are expressed in USD.

**Findings & value added:** The analysis showed that the impact of integration with the European Union on trade in food products of the new Member States was varied. The highest and fastest growing surplus in food trade was achieved by Poland, followed by Hungary, Lithuania and Bulgaria. There was a deficit in food trade in the Czech Republic, Romania and Slovakia. All the countries listed above were significant exporters of food products to the world market, but Poland held the dominant position among them (with the share of NMS in exports exceeding 40%). The results of the index analysis prove that the Polish food sector has so far been competitive on the world market and that the measures of this competitiveness have improved during the period of EU membership. This sector was also much more competitive than the food sectors of other new EU Member States, including the Czech Republic and Hungary (next to Poland, the two largest exporters of food products in the NMS).

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### *Labour share and income inequalities in the European Union, taking into account the level of development of economies*

*JEL Classification: J3; C51*

*Keywords: labour share; income inequalities; panel models; European Union*

#### ABSTRACT

**Research background:** The relationship between labour share and income inequality is a complex and multifaceted problem. Despite ongoing discussions among economists, there is still no consensus on the direction of the relationship between labour share and income inequality.

**Purpose of the article:** The article aims to assess the impact of labour share on income inequality, which is measured in three ways: the Gini index of gross income, the Gini index of market incomes, and the Gini index of household disposable income.

**Methods:** Dynamic panel data models were applied to estimate the relationship between Gini coefficients and socio-economic indicators. The study investigated 25 European Union countries (Cyprus, Croatia and Malta were excluded due to lack of data).

**Findings & value added:** Despite the long process of convergence of the EU economies, there is still great diversity in the labour share, social inequalities, and the interplay between these factors. The added value of this research is the indication of labour share impact on three Gini measures covering a diverse income spectrum (from labour and capital). Based on the research findings, hypothesis 1, claiming that the more developed the national economy, the lower the share of employment income, favouring capital gains, is confirmed. Hypothesis 2 (as the share of income from work increases, the Gini coefficient of gross incomes decreases) has not been confirmed. There is no significant relationship between labour share and the studied Gini measures in 'old' EU countries. In 'new' EU members, there is a reverse relationship than assumed in hypothesis 2. The growth of the Gini coefficient was influenced by the rise in labour share, which can be attributed to the diversity in economic structures.

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*Evolution of the regional innovation system in terms of covid pandemic, financial and economic crisis: the case of Lower Silesian in Poland*

*JEL Classification:* O31; O33; O38; L14; C35

*Keywords:* innovation; system; research and development; determinants of innovation; evolution of innovation systems

ABSTRACT

**Research background:** The various external shocks could have a great influence to any regional innovation system. The new technology can be initiated through both passive (purchase of machinery and equipment) or active way (research and development activities). With regard to regional innovation systems, the factors determining these processes are related to the country development where the region is located. Furthermore, by the years the conditions can be changed in case of the natural evolution process or revolution shock as financial, economic or pandemic crisis.

**Purpose of the article:** Therefore, the purpose of this article is to identify the factors evolution of the new technology including passive and active technology transfer in the regional innovation system (Lower Silesian) in a catching-up country (Poland).

**Methods:** Using logit modelling, industrial enterprises were analysed in three periods: 2004–2006, 2010–2012 and 2019–2021. The territorial scope covered one of Poland's regional innovation systems, i.e. the Lower Silesian Voivodship.

**Findings & value added:** The evolution of the innovation system may be interpreted by short-term and periodic revolutions showing up at the market a fully independent to the firm. We can divide them in two alternative groups: a high and low resilience to various market shocks. To the first groups we could include: R&D and Equipment interrelations (growing competence effect) and cooperation within the industry (with supplier and customer only). The low resilience is observed in the four other categories as follows: the cooperation with R&D (LIFO effect), the economy condition, the lack of external sources of funding (sinking effect), the achievement of innovative activity (adaptation effect). As we pointed above some of them are more sensitive to external shocks and the others are not. It means the evolutionary development of any system, including the technology one, can be distracted by an external independent condition. From the past it been called "the creative destruction" discovered by Schumpeter. It radically slows down some evolutionary development or changes its directions. An entrepreneur needs to learn and adapt. We showed both: a direction and strength of external different kind of shocks to evolution of regional innovation system in a catching-up country. Knowing them let us react on time in the future to reduce negative effect to the regional economy.

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### *Economic sentiment indicators and their prediction capabilities in business cycles of EU countries*

*JEL Classification:* C53; E32; E37; G01

*Keywords:* business cycle; cross correlation; prediction; ESI; GDP; IIP

#### ABSTRACT

**Research background:** The post-World Financial Crisis period showed us that an application of the qualitative data focused on the expectations of the enterprises and consumers in a combination with the quantitative data in the individual economy sectors is a good prerequisite for reliable prediction of the economic cycles.

**Purpose of the article:** The main goal of the presented study was to test the ESI prediction capabilities and its components in a relation to the economic cycles of the EU countries in the individual time periods.

**Methods:** The time series for the period Q1 2000 to Q4 2022 and the three selected time periods were a subject to undergo the selection of the cyclical component applying the Hodrick–Prescott filter and then, the relationship between the variables was determined employing the Pearson correlation coefficient with the time shifts. The relation of ESI and its components to GDP and the Index of Industrial Production (IIP), which represent the economic cycle, was analysed. The prediction volume and the cross-correlation values determined the nature of the observed cyclical variables.

**Findings & value added:** The results of the analysis point to the fact that ESI and its components are able to ensure a high-quality prediction of the economic cycle only in the selected EU countries. Regarding the components of the ESI, the Consumer confidence indicator, Construction and Industrial confidence indicators show the best predictive capabilities. The analytical outcomes show that the ESI size and lead period vary over time and after the 2008 crisis, the ESI showed better predictive capabilities in a relation to GDP and IIP than before the crisis. The Covid 19 pandemic had a significant negative impact on the ESI predictive capabilities.

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### *Determinants of innovative activity of industrial enterprises*

*JEL Classification:* O31; O33; O38; L14; C35

*Keywords:* product innovations; process innovations; improvement innovations; radical innovations; didactic aspects of cooperation between science and business

#### ABSTRACT

**Research background:** When studying the literature on the subject, you can come across many publications that indicate what factors affect the innovative activity of enterprises. Frequently described variables include, among others, the size, revenue dynamics and technological class of the company. There are also publications that describe the impact of relationships and distance from other participants in supply chains on innovation activity. However, there are no publications that describe the impact of cooperation between science and business units in the didactic aspect on innovative activity.

**Purpose of the article:** The main purpose of the article was to identify the determinants affecting the occurrence of innovations in the enterprise, broken down into radical and streamlining innovations as well as product and process innovations.

**Methods:** The article is based on empirical data obtained by means of a survey questionnaire sent to industrial enterprises. The collected data was then processed using logit modeling, which enabled the selection of independent (statistically significant) variables that describe the dependent variables adopted in the study. Dependent and independent variables were binary (0 or 1).

**Findings & value added:** Based on the conducted research, it can be observed that the implementation of new products for production is positively influenced by, among others: the implementation of apprenticeships in the company, financing the implementation of the new product with bank loans and what seems to be an unusual barrier, which is low public administration support for innovation. On the other hand, the factors hindering the implementation of a new product into production included, first of all, a low rating for scientific employees for their competences issued by entrepreneurs. In the case of the implementation of new processes, the factor stimulating this type of activity was, among others, study visits of students and lecturers to enterprises.



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*The influence of leaders' regulatory focus on firm performance: the mediating role of organizational creativity and resilience*

*JEL Classification: D23; M12; M50*

*Keywords: regulatory focus; organizational creativity; organizational resilience*

ABSTRACT

**Research background:** Based on the upper echelons theory, this research focuses on the regulatory focus of top managers and describes how the promotion and prevention focus of top managers affects business performance differently. Regulatory focus suggests that the actions of a leader may be regarded as an endorsement of promotion-focused or prevention-focused concerns by the firm, and this perception will impact organizational behavior in terms of creativity and resilience. The previous research about the effect of regulatory focus on organizational creativity and resilience remains contractor findings.

**Purpose of the article:** This research applies the person-situation interaction theoretical foundations to hypothesize how organizational creativity and resilience mediate these linkages between top manager leader regulatory focus and firm performance.

**Methods:** The research design is a cross-sectional survey. From January to May 2022, responses were obtained from 321 top executives of Vietnamese businesses. SmartPLS 3.2.7 was used to analyze data using PLS-based structural equation modeling.

**Findings & value added:** This study has discovered the mediating roles of organizational creativity and resilience in the relationship between regulatory focus and firm performance. Consistent with previous research, the empirical results have confirmed the promotion foci of leaders could foster organizational creativity and resilience, boosting significantly firm performance. Even though there is no empirical evidence proving the direct relationship between the prevention foci of leader and firm performance, this research also illustrates this relationship under mediating roles of organizational creativity and resilience. Due to the different ways to impact an organization's outcome, this study emphasizes that leaders should be conscious of their natural inclination to infuse their objectives into their firm's strategy and investigate ways to balance their viewpoints for the benefit of the organization.

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### *The role of foreign-owned entities in economic resilience during Covid-19 pandemic*

*JEL Classification: F23;G32; L25*

*Keywords: foreign-owned entities; pandemic; firm-level; resilience; corporate performance*

#### ABSTRACT

**Research background:** Over the decades, foreign-owned entities (FOEs) have become an important part of the economic landscape considered as behemoths of globalisation but also transmitters of positive effects such as technology or know-how spill-overs. In times of volatility and uncertainty firms' contribution to building resilient economy is on the top of public agenda.

**Purpose of the article:** Purpose of the article is two-fold. Firstly, we test, how FOEs perform in this stressful time of volatility and uncertainty. Secondly, we examine contribution to resilience by digital and technological intensive sectors.

**Methods:** The study utilises the Bureau van Dijk (BvD) Orbis firm-level database as a primary data source. The results are derived with the use of two econometrical approaches. Firstly, we estimate a static model utilising the ordinary squares estimator. Secondly, we re-estimate the equations using a two-step System GMM estimator. It introduces a lagged dependent variable into the model and implements a correction for endogeneity among covariates by including instruments (in levels and differences).

**Findings & value added:** We use size, age, ownership, gearing and intangibility as firms' financial performance determinants, together with sector-, country- and time- fixed effects. FOEs compared to domestic ones generated higher revenue growth rate. In times of crisis high-tech and digital firms are more resilient. However, ownership does not matter in this respect. We contribute to the discussion about functions performed by FOEs in crisis and turbulent times, in which resilience issues are on top of the agenda. Our research intends to bridge the gap between the performance of FOEs, micro-level analysis, and resilience.

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### *Business students' social entrepreneurship competence: evidence from private universities in Latvia and Czech Republic*

*JEL Classification: A13; A20; I21*

*Keywords: social entrepreneurship; social entrepreneurship competence; competence models; competence evaluation*

#### ABSTRACT

**Research background:** Social entrepreneurs play an important role in the economic and social developments of the communities in which they operate. The career aspiration of social entrepreneurs can be encouraged if youths are given early education — an exposure during study process. Besides that more than ever the social entrepreneurship education relies on the instilling competences — from technical/business skills to problem solving mastery, from networking to ability of innovative thinking, from orientation towards others to social responsibility, etc

**Purpose of the article:** To research social entrepreneurship competence of business students of private universities, i.e., EKA University of Applied Sciences (Latvia) and Ambis University (Czech Republic).

**Methods:** Students' survey using the instrument entitled "Profile of the Social Entrepreneur". The data are processed by Principal Component Analysis and BiPlot Analysis. The following hypotheses are set: H0: Students' SE competence does not depend on study level and socio-cultural background; H1: Students' SE competence depends on the study level; H2: Students' competence depends on the socio-cultural background.

**Findings & value added:** Results of the research demonstrate the dependency of students' SE competence on the study level (BA or MBA), as well as on the country's business education model. The results will help to improve business study curriculum.

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### *Digitalization technologies and behavioral management in higher education institutions: multidimensional immersion model*

*JEL Classification:* O31; O32; O43

*Keywords:* digitalisation; immersive technologies; behavioral research

#### ABSTRACT

**Research background:** Modern higher education poses a significant number of challenges that require creative and innovative response. An educator's "toolbox" should be complemented with a number of innovative immersive educational instruments that allow students to get full understanding of the subject, foster student activity and contribute to continuous improvement of education quality. Such tools include, but are not limited to: verbal experience transfer, involvement of students in development of educational environment, immersive space scenarios creation for virtual or real world, AR, AR+ and VR technologies, gamification, etc. The use of said tools and coming up with techniques to evaluate the effectiveness of single technique or an overall approach is a quite sophisticated research task. Interdisciplinary research including methods like visual representation analysis and behavioral analysis are needed to come up with methodology allowing to categorize various immersive education techniques and approaches.

**Purpose of the article:** this article is aimed at promotion of innovative education tools such as immersive educational environments. Choosing appropriate immersion instrument with certain dimensionality might pose a challenge. Article offers a methodology and equipment to evaluate the effectiveness of immersion tool and assess expediency of particular immersion tool implementation. One of the possible solutions to this challenge is to use behavioral studies engaging proper equipment and software.

**Methods:** bibliometric analysis, immersive technologies in education, behavioral experiments.

**Findings & value added:** Ukrainian higher education is facing additional challenges with constant blackouts which force students and professors use asynchronous learning methods. It has direct impact on student engagement level since teachers have only visual tools to attract students' attention. This raises a need to come up with an academic standard for visual educational content allowing to keep student engagement at levels ensuring proper education quality. High level of academic standards has direct influence on social-economic development on regional and country level, which raises a research question about influence of educational instruments effectiveness on "academia-society" dyad.

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### *Financing of public health services and national security: pathway to the new model of good governance for post-pandemic recovery*

*JEL Classification: C23; H52; I18*

*Keywords: COVID-19; public health; post-pandemic recovery; national security; good governance*

#### ABSTRACT

**Research background:** The COVID-19 pandemic has triggered risks of national security violation due to negative influence within social, economic, and environmental channels. Public health system was primarily damaged by the pandemic, but it also boosted negative shocks transmission to other spheres of social life. It brought to the necessity of finding the most effective model of financing of public health services in terms of ensuring national security and COVID-19 resistance.

**Purpose of the article:** to identify the new model of good governance for post-pandemic recovery based on clarification of the most effective scheme of financing of public health services in terms of ensuring national security and COVID-19 resistance.

**Methods:** It is used such instruments of theoretical and empirical research: 1) bibliometric analysis with Vosviewer — for formation of the research theoretical based on identifying cohesion within logical chain “public health financing — national security — COVID-19”; 2) multivariate statistical analysis and cluster analysis — for clarification of models of financing of public health services and its changes in pre-pandemic and pandemic periods; 3) Hausman test and panel data regression analysis using Stata software — for revealing relationships between national security dimensions and public health services financing schemes; 4) expert approach — for generalization of theoretical and empirical research results for developing a new model of good governance for ensuring national security within the post-pandemic recovery.

**Findings & value added:** The obtained theoretical and practical results can be useful for scientists and government officials in terms of developments a strategy of combating national and global threats triggered by COVID-19, formation a new model of good governance for ensuring national security within the post-pandemic recovery.

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### *Shrinking cities in Poland: identification and their economic assessment*

*JEL Classification: H7; J11; R51*

*Keywords: demography; urban economy; local government unit; shrinking cities*

#### ABSTRACT

**Research background:** The process of systematic loss of inhabitants is an increasingly common and urgent problem for many cities around the world. This phenomenon is also present in Poland. It concerns not only the demographic sphere of the city, but also has its links with the economic and financial, social and environmental spheres. There are many definitions of urban shrinkage in the literature, but there is no final and acceptable definition of this process, which proves its complex and multifaceted nature.

**Purpose of the article:** The aim of the study was to identify the most important features of the process of urban shrinkage and to identify cities quantitatively based on the criterion of systematic population loss. The second objective concerned the economic assessment of groups of shrinking cities depending on the intensity of population loss.

**Methods:** The analysis of population changes in 2017–2021 and the k-means classification method were used to identify shrinking cities in Poland and classify them according to the intensity of the shrinking process. Selected variables characterizing local economic development were used to assess the economic situation of cities.

**Findings & value added:** Addressing the problem of shrinking cities in Poland has not only a theoretical but also a practical dimension, because it can be expected that it will intensify in the coming years, but it is rarely discussed at the central level. The results of the conducted research indicate that the process of shrinking cities in Poland intensified and affected an increasing number of cities. These cities can be divided into four groups. Each of them was characterized by a different economic situation and its negative relationship with the shrinking process.

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### *Model of economic growth through innovation: case of Poland*

*JEL Classification:* O11; O47; O20

*Keywords:* model; economic growth; regional development; regional innovation system; R&D

#### ABSTRACT

**Research background:** Within the literature on innovation-based regional economic growth, various approaches and trends have been identified. One such approach emphasizes the criticality of institutional support, specifically in the form of investment in research and development, originating from both the state budget and private sector entities. Another approach regards the region's socio-economic milieu as a key driver of growth, while a third approach highlights the importance of the region's locational attractiveness and proximity. While these approaches have often been considered as competing and mutually exclusive, they may act as independent factors that collectively contribute to the determination of innovation-based economic growth.

**Purpose of the article:** The primary objective of the authors was to identify key factors and variables that could serve as the basis for an econometric model, incorporating the various streams of thought on innovation-based regional economic growth. The authors subsequently proceeded to validate the model to assess the effectiveness of such a comprehensive approach in shaping regional economic policies.

**Methods:** Following an extensive literature review, the authors selected a base model and identified the most significant factors that should be included in the model, taking into account their influence on the dependent variable. Then they identified simple variables and calculated synthetic indicators to determine their impact on the factors, subsequently substituting variables to validate the proposed model of economic growth through innovation.

**Findings & value added:** The resulting model takes into account the complexity of processes and factors that influence economic growth through innovation, and is expected to be a valuable tool in shaping regional policies aimed at promoting innovation. The conducted validation suggests that the identified factors exert varying degrees of influence on the region's economic growth and exhibit regional variation in significance.

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### *Concentration of business activity in the member cities of the Polish National Cittaslow Network*

*JEL Classification: O11; O18; R11*

*Keywords: slow cities; concentration of business activity; Florence's coefficient of localization; specialization of cities*

#### ABSTRACT

**Research background:** The Polish National Cittaslow Network associates small cities which, in line with the slow city concept, strive towards sustainable development and ensurance of proper relations between economic development, care of the natural environment and improved quality of life of the city residents. The development of Polish slow cities should rely on the local, endogenous potential. Thus, an opportunity for every slow city to develop is through the support to local producers and development of local production, and in particular the support of the dominant branches that could allow the city to achieve some specialisation.

**Purpose of the article:** The aim of this study has been to analyse the concentration of business activity in the member cities of the Polish National Cittaslow Network, and to identify areas for specialisation of each city.

**Methods:** The study covered 35 cities which belong to the Polish National Cittaslow Network. To evaluate the degree of concentrations of the PKD sections (Polish Classification of Business Activities) in this cities, Florence's coefficient of localisation was applied. The value of this index in year 2022 and the dynamics of its change in years 2018–2022 were calculated. The classification of the PKD sections in every city was also performed, thereby distinguishing four clusters.

**Findings & value added:** Based on the study, it has been demonstrated which PKD sections corresponded to the highest degree of the concentration of business activities. The sections which can be referred to as the “engines of the local economy” have been identified. Other clusters of the PKD sections have been also distinguished, which have been named as: developing sections, sections losing importance, sections of the marginal importance for the local economy. The study results have a practical dimension as they point to directions in the specialisation of the Polish slow cities.



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*The effectiveness of public tasks in the context of the institutional efficiency of local governments (in the example of primary education)*

*JEL Classification: H49; H79*

*Keywords: effectiveness; DEA; institutional efficiency; local government; public tasks*

ABSTRACT

**Research background:** The critical value guiding the functioning of local governments is to perform (through the implementation of public tasks that meet the collective needs of the local government community) a servant role toward residents. Although a commune, as a non-profit organization, does not have to be profitable, it must apply appropriate management practices to implement its goals and attract investors fully. Local government's efficient and effective operation is now the basis of modern society. The measurement and analysis of results have become an international trend in public administration modernization. Management by results is a manifestation of public concern for properly using taxes. It strengthens the responsibility of local authorities for decisions, stimulates creativity, and supports the financial planning process. In the analysis of the results of a local government unit, various approaches are used, both parametric and non-parametric.

**Purpose of the article:** This paper aims to evaluate the effectiveness of public primary education in relation to the institutional efficiency of local governments in the area of social, cultural, and educational tasks.

**Methods:** The effectiveness of local governments in implementing educational tasks will be assessed using the non-parametric Data Envelopment Analysis (DEA) method. It will be based on secondary data from the resources of the Local Data Bank and the Central Educational Commission. In addition, regression analysis using single and double equation models will be used to determine the relationship between the effectiveness and efficiency of local governments.

**Findings & value added:** The conducted research will determine the relative effectiveness of primary education in municipalities, allowing for building a super-effectiveness ranking and assessing the changes that have taken place in this area in 2019–2021. In addition, they will enable the identification of the relationship between the effectiveness and efficiency of local government units in providing educational services.

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***Analysis of the functioning of bicycle roads as an element of Smart City on the example of Poland 10 biggest cities***

*JEL Classification: R52; R53; R58*

*Keywords: smart city; smart mobility; bike; bikeway; bike sharing; quality of life*

ABSTRACT

**Research background:** The use of bicycle transportation for travel whether within a city or between cities is an important factor that has a positive impact on the quality of life of residents, particularly in the aspect related to the environmental friendliness of transportation. Also, it is an important part of the quality of life in the Smart City because of not only the ability to move to work, store, etc., but also the extensive network of bicycle paths provides many opportunities for leisure activities.

**Purpose of the article:** To investigate what is the amount of bicycle roads in polish 10 biggest Cities and how it changed between 2012 and 2021. To investigate what is the amount of bicycle roads in polish 10 biggest cities per capita. Investigate whether the number of bicycle roads in each analysed city is related to the wealth of the population as measured by the level of GDP per capita.

**Methods:** The statistical analysis of the data from various databases especially from GUS database. The analysis used indicators like — km bike route per 1000 inhabitants and km bike route per 100k2 of city area to use them in analysis.

**Findings & value added:** The extensive analysis of the factors influencing the increase of bicycle roads in polish biggest cities. The analysis how economical and others factors impact this phenomenon. The value of the paper is connected with finding patterns in the case of bike roads building in polish cities and recommendations for government for the future development.

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### *Macroeconomic determinants of enterprise births in European countries: the role of the unemployment structure*

*JEL Classification: J64; M13*

*Keywords: unemployment; enterprise births; unemployment structure*

#### ABSTRACT

**Research background:** The distinction between necessity and opportunity entrepreneurs has revived interest in the role of unemployment in starting a business. Whereas the unemployment push effect was empirically evidenced by several micro-level studies, the findings on the macro-scale are ambiguous. The macro-scale unemployment push mechanism is conditioned by cyclical fluctuations or the industry-specific characteristics. Most studies, however, have treated the unemployed as a homogeneous group. In fact, the unemployed individuals differ in terms of entrepreneurial skills or ability to become self-employed, which could also be behind the disparate results.

**Purpose of the article:** In filling this gap, the study aims to examine the links between unemployment rate and enterprise births while considering the unemployment structure in terms of human capital of unemployed and unemployment duration.

**Methods:** The issue is examined using the example of 20 European countries in the period 2004–2020 based on Eurostat and World Bank data. The empirical approach applies the fixed- and random-effects panel modelling. Moreover, not only is the sectoral diversity of entrepreneurial activity considered (manufacturing, wholesaling and retailing, professional, scientific and technical activities, ICT), but also the size class of newly established enterprises (without employees, with employees).

**Findings & value added:** The study reveals that the share of long-term unemployment and the skill structure of the unemployed have an impact on new firm formation, which varies with the knowledge intensity of start-ups and their size. A higher share of highly qualified unemployed increases the start-up rates, particularly in knowledge-intensive services and manufacturing. A higher share of long-term unemployed has a negative impact on enterprise births, particularly in new businesses with employees, in manufacturing and low-knowledge businesses. The findings are important for designing effective instruments to address unemployment by entrepreneurship, in particular within active labour market policy.

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### ***Machine learning based predictions of sales leads: proof of quality from Polish business-to-business company***

*JEL Classification:* A11; B16; B21; C45; D22; M31

*Keywords:* sales leads; sales leads conversion; sales lead value; artificial intelligence; automated machine learning

#### ABSTRACT

**Research background:** Most of sales managers are struggling to obtain high conversion rate of sales leads. It seems to be the only way to reduce marketing costs and enlarge effectiveness of whole sales process. Most of researchers are focused on large scale operations and data therefore describe very intensive and cost consuming methods of sales optimization which results in high entry threshold, unreachable for SME. At the same time SMEs in IT sector, especially in B2B model have to provide very intense marketing activities which results in high numbers of sales leads, in most cases without any kind of sophisticated value prediction support. When resources are limited, being focused on highest predicted value leads seem to be critical.

**Purpose of the article:** The aim is to prove: there is a cost-effective method of using Artificial Intelligence (Machine Learning) for predictions of sales in SME operating in B2B model.

**Methods:** The study examines the complexity of the sales activities: 1) financial value of sales leads, 2) success probabilities defined by status, 3) intensity of contacts, 4) geographical factors, 5) interpersonal factors. The research is focused on data from 1500 historical sales leads. The data has been classified by proposed aggregate measures. The AutoML model on Google Cloud Platform has been trained by prepared data and used for sales lead future value prediction and confronted to historical outcomes.

**Findings & value added:** The paper shows some new approach to algorithmizable and non-algorithmizable problems of sales leads and gives strong record of successful predictions of sale opportunities on a level of relatively small enterprise. In opinion of an author it paves the way for further research in topic.

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***Determination of the importance of job offer characteristics by students of economic studies: factor analysis***

*JEL Classification: I25; J24; J64*

*Keywords: factor analysis; higher education; students; job attributes; labour market*

ABSTRACT

**Research background:** The paper addresses the current subject matter related to the students' activity in the labour market and constitutes a part of the current research trend related to students' search for employment.

**Purpose of the article :** The paper presents four research questions: What is important to students of economic studies in a job? What job offers do students of economic studies look for? Which characteristics of a job offer are important for students of economic studies and why? Is there a difference in the expectations of students of economic studies regarding job offers, which is determined by gender, age, place of residence, type of study and source of income? In order to obtain data, an online questionnaire was developed and filled out by students of the Cracow University of Economics (N=756). The search for employment is based on individual preferences, but the survey can identify those that are common to the surveyed group of students.

**Methods:** : In order to analyze the collected data the Factor Analysis was implemented, within which the Principal Components Analysis method was used. The rotation method and the scree criterion were used to determine the number of factors. Next, the factor analysis was used to show the differences in the answers given by students, depending on the variables adopted to characterize the study group.

**Findings & value added:** Based on the results of the factor analysis, it was confirmed that the age, gender, place of residence, educational level and source of income of the surveyed students have an impact on the employment choices they make. The conclusions resulting from the study are of cognitive and applicable nature, especially for employers and recruiters who, with this knowledge, can react flexibly and prepare accordingly to attract and hire employees from the generation "Z".

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### *Cybercrime forecasting for effective strategic management of transnational companies*

*JEL Classification:* C23; C53; G34

*Keywords:* cybercrime; forecasting; management; strategy; transnational companies

#### ABSTRACT

**Research background:** Over the last decade, a rapid increase in the volume of cybercrimes and financial losses from them have been observed in all spheres of economic activity. Transnational companies working with large volumes of information are the most vulnerable to cybercriminals. It was found that there is a significant time lag between the moment of committing cybercrime and finding its consequences. It results in loss of information, customers and finances. Therefore, transnational companies should apply more effective cyber security management strategies to prevent probable mass cyber attacks in different countries.

**Purpose of the article:** This research aims to prove the necessity of predicting cybercrimes to improve the effectiveness of strategic company management and implement predictive models to prevent losses from mass cyberattacks.

**Methods:** The study was conducted based on panel data from 40 countries, which reflect the quantitative characteristics of cybercrimes detected with the help of mail antivirus, Kaspersky Lab's reputation filtering technologies and intrusion detection system for the three months of 2022. The research methodology involved primary data analysis based on trend decomposition analysis, checking for compliance with the normal distribution based on the Harke–Behr test, and for stationarity. Based on the analysis results, a pooled regression model, a model with fixed and random effects, and a Long short-term memory model were built, and their quality was assessed.

**Findings & value added:** Applying the proposed forecasting methodology and its results will allow multinational companies to predict daily in an operational mode the potential risks of mass cyber attacks for the country in which their sub-divisions are located. It will contribute to implementing their quick reactions to potential companies threats. This approach is necessary to create internal safety management standards for multinational companies.

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### *Export activity of enterprises: a case study of a border region*

*JEL Classification: F14; F50; P23; P45; R11*

*Keywords: export; SME sector; border region; external and internal borders of Poland and the EU*

#### ABSTRACT

**Research background:** Enterprises, especially those belonging to the small and medium-sized sector, are the basis for the functioning of the Polish economy. Their willingness to develop makes them decide, among others, to: for export activities. Especially located in border regions, they pose a challenge to building economic cohesion and economic activation of these areas. The openness of the border and the prevailing economic relations between the neighboring countries are of great importance.

**Purpose of the article:** Identification and assessment of the state of export activity of Polish companies, with particular emphasis on the sector of small and medium-sized enterprises located in the border region.

**Methods:** method of analysis of domestic and foreign literature and empirical research — secondary — the level of export activity by region in terms of quantity and value (examples of border regions).

**Findings & value added:** The conducted research on the dynamics and level of export activity in a regional cross-section — border regions — show significant differences (in terms of quantity and value). This differentiation is influenced by location and different historical and political conditions of the neighbours. Poland's accession to the EU in 2004 and accession to the Schengen area in 2007 resulted in completely different opportunities for the development of export activity in regions located on the western border of Poland (e.g. with Germany, and thus within the European Union) than in regions located in the north-east Poland's eastern border (e.g. with the Kaliningrad Oblast of the Russian Federation, where the state border is also the border of the European Union in the eastern part of Europe). This specificity means that there is still a lack of compact, uniform studies on the export activity of enterprises in relation to border regions. This is certainly a research gap that still exists.

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### *The NewConnect market as a source of raising funds for the SME*

*JEL Classification: D53; E44; G32; M13; O16*

*Keywords: NewConnect market; SME; new economy industries; capital market*

#### ABSTRACT

**Research background:** The NewConnect market is intended for small, innovative and dynamically developing companies, especially in the so-called new economy. A debut on this market is one of the possible strategies for raising capital by a small and medium-sized entrepreneur. However, in times of economic downturn and limited supply of capital on the capital market, only the most credible have a chance to raise capital on the alternative market.

**Purpose of the article:** The aim of the article is to present the real nature of companies listed on the alternative financial market in Poland. It was assumed that mainly young, innovative and fast-developing companies are listed on the NewConnect market.

**Methods:** method of analyzing domestic and foreign literature as well as empirical research — secondary — concerning the analysis of the NewConnect market, e.g. structure of size, number, capitalization of enterprises/debut companies, industry/sectoral structure, turnover value, rate of return and index volume.

**Findings & value added:** The conducted empirical analysis showed that the majority of companies on the NewConnect market are not characterized by rapid development, a short period of entry and a high level of innovation. There are also listed companies from industries where the level of innovation has not been a key element of operation from the very beginning. Moreover, the changes taking place (i.e. from the moment of establishing the market to the current situation) are not favourable. While at the beginning of operation, the companies listed on it were characterized by a relatively high level of innovation, unfortunately, the current level of this innovation has decreased. This justifies the necessity of further research in the area of development of the NewConnect market as a source of raising funds for small and medium entrepreneurs.



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### *The interdependence of R&D, innovations and productivity: case of Polish manufacturing companies*

*JEL Classification:* O1; O3; O32; O34

*Keywords:* R&D; subsidy; patenting; innovation; firm-level analysis

#### ABSTRACT

**Research background:** The structural model proposed by Crépon, Duguet, and Mairesse (the CDM model) in 1998 has been the workhorse of the empirical analysis of the relationship between firms' innovation input and output and firms' performance. Most research applying the CDM methodology shows a positive relationship between firms' R&D, innovation, and productivity, primarily in highly developed countries. However, some studies do not confirm the universal nature of these relations, pointing to possible differences between countries, sectors, firm characteristics, sources of knowledge, types of innovation, or performance indicators.

**Purpose of the article:** The main purpose of the study is to explore the relationship between R&D expenditures, patent applications, and labor productivity among Polish manufacturing firms.

**Methods:** The study applies a four-stage analysis of the innovation-performance relationship based on the CDM model. The method enables us the tracking transformation of innovation input into output and its impact on the performance of companies. The analysis is based on the survey conducted in 2018 on a random sample of 1049 Polish manufacturing firms.

**Findings & value added:** The results reveal interesting insights into the analysed relationship. Firstly, initial results confirm the vital role of cooperation, being an exporter, and functioning in specific markets for deciding to invest in R&D. Secondly, state aid, employees' education, and being part of the capital group are crucial for the R&D intensity. Thirdly, the analysis confirms a statistically significant and positive relationship between Polish manufacturing firms' innovation input and output. However, the results of the last stage of the analysis indicate that the performance of manufacturing firms is unrelated to the innovation output.

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### *Exploring CSR performance as a proxy for competitive advantage across sectors in the Central European countries*

*JEL Classification: L26*

*Keywords: CSR; ESG score; competitiveness; central European countries; profitability; NACE sectors*

#### ABSTRACT

**Research background:** CSR demonstrates that a business should take an interest in broader social issues rather than just those impacting profit margins. This business orientation seems to be a good source of competitiveness in the era of globalisation. The enterprises across all sectors need to focus their interest on the pillars of the CSR concept, which ultimately can bring them a competitive advantage.

**Purpose of the article:** This postulate creates the paper's main aim — to demonstrate the level of CSR concept in the central European countries and specify the impact of economic sectors on the development of social responsibility. The ESG score, as the indicator of the level of CSR performance, and financial and accounting data of 490 publicly-traded enterprises from Central Europe were used for this study.

**Methods:** The correlation analysis, Kruskal–Wallis test and cluster analysis were applied to test the stated hypothesis. The results of the correlation analysis proved that the CSR performance of central European enterprises, measured by the ESG score, is positively associated with the level of corporate earnings.

**Findings & value added:** The study revealed statistically significant differences in the development of the CSR concept across the sectors. Coming from this knowledge, cluster agglomerative hierarchical clustering was used to group sectors with homogenous approaches to CSR. Even though the study is focused on all publicly-traded enterprises of the Central European area, whose CSR data measured by ESG score are available, not all the sectors are equally represented, which may be perceived as the study limitation.

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***Facing the challenge of hospitality: Ukrainian refugees and local policy in a less developed region***

*JEL Classification: F22; H12; H75; J61*

*Keywords: refugees; migration; local policy; Ukraine*

**ABSTRACT**

**Research background:** Since the beginning of the war, Poland has welcomed more than 1.5 million Ukrainian refugees. This new reality has put pressure on local authorities, especially those managing less developed, poorer regions with less experience of receiving immigrants, as they faced the sudden urge to accommodate the needs of these new arrivals.

**Purpose of the article:** The aim of this article is to present the profile, needs and potential of people who have found refuge in less developed area (Warmia and Mazury). It helps to anticipate and understand Ukrainian migration — as the influx of refugees has long-term effects, requiring local authorities to take action, i.a. to ensure the availability of social services. Integrating thousands of refugees requires careful planning, developed infrastructure, and funds. It is also worth considering the benefits of the potential of new residents. An additional purpose is sharing objective knowledge on the effects of the ongoing war.

**Methods:** The research was conducted by interview and questionnaire methods. The survey questionnaire was administered to refugees from Ukraine living in Olsztyn and the surrounding district. The questionnaire consists of questions about the migration process (single- and multiple-choice) and questions about the respondent. In the case of respondents living in places of collective accommodation, the survey was preceded by a face-to-face interview with those responsible for organising support for refugees in these centres.

**Findings & value added:** Through the research carried out, it has been possible to obtain a great deal of information about people who found refuge in an area that is less attractive for migration. The reasons for choosing this destination were found out, a profile of the immigrant was created, the needs in terms of social infrastructure and the set of advantages that immigrants can offer on the local labour market were described.

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### *The impact of the size of funds on the use of selectivity and market timing by investment funds*

*JEL Classification:* C01; C22; G14

*Keywords:* market timing; selectivity; similarity; fund size

#### ABSTRACT

**Research background:** Investment funds are an important part of the capital market. Household savings in this type of asset are increasing every year. From an investor's point of view, the performance of funds is important. These, along with the risks, are what most often determine the choice of fund type and finally the specific fund. The performance of a fund is often determined by both the size of the fund and the application of the managers' selectivity and market sense.

**Purpose of the article:** The aim of this research is to investigate the impact of fund size on performance through the use of selectivity and market sense by managers. Dividing funds into size groups will allow the search for patterns in terms of managers' use of market timing.

**Methods:** The research used a regression model as well as market timing models and was divided into groups using Ward's method. The performance of the funds was determined using investment performance indicators, i.e. Omega and Sortino.

**Findings & value added:** The added value is the study of market timing in groups of funds similar in size. The research will provide an answer as to whether this similarity in groups also translates into the use of selectivity and market timing by managers. The results will give the investor an indication of which fund to choose in terms of size in order to be able to achieve good performance. Due to the interconnectedness of the markets, this research can be considered globally.

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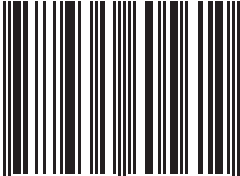
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