

# 16<sup>th</sup> INTERNATIONAL SCIENTIFIC CONFERENCE RELIK 2023

**Reproduction of Human Capital - mutual links  
and connections**

## **Book of Abstracts**



Department of Demography, Faculty of Informatics and Statistics  
**Prague University of Economics and Business**

### **Conference Sessions:**

- Demography and human resources
- Economy and human resources
- Reproduction of the human capital
- Economic demography
- Population ageing and its consequences

## **The 16<sup>th</sup> International Scientific Conference RELIK 2023, Prague, November 23-24, 2023**

- Regional demography
- Demographic models
- Young scientists (section for presentation of the results of works of students, PhD. students and young researchers)
- Other

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### **Edited by:**

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## Vývoj sňatečnosti, rozvodovosti, potratovosti a plodnosti v České republice v období od roku 1995 do roku 2021

Development of marriage rates, divorce rates, abortion rates, and fertility rates in the Czech Republic from 1995 to 2021

**Adam Kristián Bartko**

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### Abstract

Táto práca sa bude zaoberať porovnávaním rozvodovosti, sňatočnosti, potratovosti a plodnosti v Českej republice. Tieto javy sú ovplyvnené ekonomickými a morálnymi faktormi a začínajú byť veľkým problémom spoločnosti. Štatistickým spracovaním si ukážeme ako sa tieto javy menili postupom času a pokúsime sa zistiť ktoré faktory na tieto javy pôsobia. Zároveň si vytvoríme v tejto práci predikciu živo narodených detí pomocou lineárnej regresie. Naše skúmané obdobie bude od roku 1995 do roku 2021.

This work will focus on the comparison of the divorce, fertility, marriage, and abortion rates in the Czech Republic. These phenomena are influenced by economic and moral factors and are becoming a big problem for society. Statistical processing will show us how these phenomena have changed over time, and we will try to find out which factors affect these phenomena. Also, we will create a prediction of live born children for the future of our society. Our period of study will be from 1995 to 2021.

**Kľúčové slová:** Rozvodovosť, sňatečnosť, pôrodnosť, potratovosť

**JEL Code :** J10, J11

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## **DURATION OF PARENTAL LEAVE IN RUSSIAN PARENTS' ESTIMATES: QUALITATIVE RESEARCH EXPERIENCE**

**Natalia Blednova – Aleksandr Neshataev – Anna Bagirova**

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### **Abstract**

Parental leave secures the workplace and wages for an employee who takes a break from work to devote time to family and children. Longer parental leave may have a negative effect on career prospects of parents: it decreases the chances of women to return to the labour market and complicates their professional adaptation. Our research aims to determine the factors that influence the duration of parents' stay on parental leave. We conducted a series of semi-formalized interviews with parents whose families were eligible to use parental leave at the time of the study (n = 30). We obtained the following results: 1) often parents consider it optimal to use parental leave until the child reaches the age of three, but many would like to return to the labour market earlier; 2) dissatisfaction with the amount of parental payments reduces the time spent on parental leave; 3) the attractiveness of work and the availability of kindergartens contributes to an earlier exit from parental leave; 4) partner's participation in domestic and parental functions does not affect the desired duration of parental leave. Our results can be used to improve the existing parental leave system in Russia.

**Key words:** parental leave policy, parental leave, duration of parental leave, design of parental leave

**JEL Code:** J11, J13, J18

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# VÝVOJ ODVĚTVOVÉ STRUKTURY ZAMĚSTNANOSTI V KRAJÍCH ČESKÉ REPUBLIKY

## DEVELOPMENT OF THE SECTORAL STRUCTURE OF EMPLOYMENT IN THE REGIONS OF THE CZECH REPUBLIC

**Hana Boháčová – Pavla Jindrová**

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### **Abstract**

In European Union countries, a five-level classification called NACE (Nomenclature statistique des activités économiques dans la Communauté européenne) is used to describe economic activities. In the Czech Republic, its national version CZ-NACE has been used since 2008, which extends the pan-European NACE by 160 national items (at the most detailed fifth level). The sectoral structure of employment changes over time. These developments have been relatively rapid, especially in the last three decades. These changes are caused by many factors, in particular by the rapid development of technology and the associated changes in the needs and demands of society. This paper will describe the development of the percentage of employees in individual employment sectors according to the CZ-NACE classification in the Czech Republic in the period 2010-2021. In the Czech Republic, some regions are traditionally more focused on agriculture, others more on industry. For this reason, the development of the sectoral employment structure will also be assessed at the level of the regions of the Czech Republic. For the most represented sectors, the situation in the Czech Republic (or in individual regions of the Czech Republic) will be compared with the situation in the European Union in 2020.

**Key words:** sectoral employment structure, regions of Czech Republic, CZ-NACE classification

**JEL Code:** J21, J24

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# ACTIVE EMPLOYMENT POLICY AND SUSTAINABLE HRM: CZECHIA

Zuzana Dvořáková

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## Abstract

Active employment policy refers to measures and strategies governments implement to promote employment and reduce unemployment. Employment policy and sustainable human resource management (HRM) are related concepts that focus on creating an approach to employment practices within organizations. While employment policy pertains to the broader framework and guidelines set by governments to govern employment-related activities, sustainable HRM emphasizes the long-term perspective on the organization level and refers to the integration of sustainable HRM practices. The paper reviews active employment policy and sustainable HRM, drawing on selected indicators and a questionnaire survey in Czechia in 2022. The first part characterizes European active employment policy measures and unemployment in selected countries 2019-2022. The second part covers results from the survey on sustainable HRM in Czechia in 2022. Findings show that adopting sustainable HRM provides a sustainable culture to attract and retain skilled workers. Results encourage discussing about the benefits of life-long learning that supports workers' employability.

**Key words:** employment policy, sustainable HRM, HRM practices

**JEL Code:** J21, M12, M51

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# Vývoj domácností a jejich hospodaření během pandemie COVID-19

Development of household and their economic situation during the  
COVID-19 pandemic

**Kristýna Dvořáková**

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## **Abstract**

This article explores the evolution and changes in households during the years 2017 – 2021. The objective is to examine certain data regarding households and their members and compare them. Common statistical methods, such as arithmetic mean, chain index, and absolute and relative comparisons, were used for analysis, which helped provide an objective view of trend changes in household structure, as well as calculations of general measures. The article is divided into 2 parts; the first part focuses on the population structure at the beginning and end of the observed period and the comparison of general measures during the period. The second part of the article addresses the concept of a household, the structure of households, the financial aspect of households, and material deprivation of the population. The article contributes to a better understanding of household dynamics in the Czech Republic, influenced by the COVID-19 pandemic, and the factors that affect their structure and development over time.

**Key words:** Households, population structure, COVID-19 pandemic, material deprivation

**JEL Code:** D1, I3, J1

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# **SOCIO-ECONOMIC DETERMINANTS OF TOTAL FERTILITY RATE IN THE CZECH REPUBLIC**

**Tereza Frömmelová**

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## **Abstract**

The central aim of this article is to explore how socio-economic variables impact the evolution of the total fertility rate, with a specific focus on the Czech Republic. The study employs dynamic regression analysis of time series data to investigate the associations between the dependent variable (total fertility rate) and a range of independent factors spanning various categories, such as social, economic, and cultural aspects. In our model, social variables encompass a wide spectrum, including the presence of family and child-oriented social support systems, accessibility to child-care facilities, housing conditions, and other relevant factors. Economic variables are comprehensively represented by metrics such as GDP, the unemployment rate, variables indicative of population well-being, and more. Demographic factors, on the other hand, encapsulate the total fertility rate itself. To facilitate this research, data is sourced from the Czech Statistical Office. The analysis unveils distinctive factors that wield significant influence over their respective trends.

**Keywords:** total fertility rate, dynamic regression analysis, demographic trends, fertility factors

**JEL Code:** C22, J11, J13

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# WORK PLACES AND HUMAN CAPITAL

## PRACOVNÉ MIESTA A ĽUDSKÝ KAPITÁL

**Marcela Galovská**

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### **Abstract**

At contribution I headlight on two specific terms. Firstly work places, which analyses historical progress and secondly is human capital and they influence on whole concept of personal management. Before then first milestone at work places was introduced flexible work places, jobs sharing at manager and so on. Science like new field work position, which influenced of structure work places. Currently at international point is work places are changed. I will researched work places with human capital. Schulz at her firstly definition of human capital terms headlight three aspects: intelligence, knowledge and skills. This contribution I am warn not only artificial intelligence but focus intellect of human capital, concrete on attention main long attention vigilance. The goal of the researched is to point out relationship two terms and their change. By this research I will used correlation analyses for them. Used statistical program SAS Enterprise Guide. Within I would use data of secondary research. These method give up the results, which describing in this contribution.

**Key words:** work places, human capital, intellect

**JEL Code:** M12, M50, M54

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# RIZIKÁ KOMUNIKÁCIE NA SOCIÁLNYCH SIEŤACH

## RISKS OF COMMUNICATION ON SOCIAL NETWORKS

**Tatiana Hajdúková – Lucia Kurilovská - Samuel Marr**

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### **Abstract**

One of the priorities of international and national politics today is to support the deployment and development of information and communication technologies in the public sector. The initiative to keep up with the times and remain competitive is manifested on a societal and personal level. The increasing flow of digital data complicates the conditions for ensuring security in the online environment. The aim of the article is to point out the dynamics of the implementation of digital progress in the EU and the Republic of Slovenia in the context of a common user who, even with ignorance, may not be sufficiently aware of the potential threats to which he is exposed when using technology. It is not in the power of the authorities involved in criminal proceedings to ensure individual protection of individuals without their responsibility. The training of individuals for the purpose of responsible správania sa in the online space must be realized parallel to the deployment and development of technologies.

**Key words:** communication, sensitive data, public administration, security, social networks,

**JEL Code:** K14, K24

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# THE EFFECTS OF CORPORATE SOCIAL MEDIA MARKETING ON CONSUMER BEHAVIOUR

**Csilla Harastiová – Bence Csinger – Tibor Zsigmond**

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## **Abstract**

The aim of the article is to assess the effects of corporate social media marketing on consumer behaviour. Within that, the consumer behaviour of Slovak consumers have been investigated. The theoretical part of the paper is dealing with the importance of social media sites; the social media tools available for organizations, its effects on consumers. The paper also highlights the differences between traditional and social media marketing. Primary research was carried out in the form of questionnaire. The questions were shared with the help of Google Forms. Snowball sampling procedure was used to gather 202 valid responses. The data was processed with the help of Microsoft Office Excel program. According to the results, most of the consumers (39%) ignore the advertisements appearing on social media. Accordingly to this results, 41% of respondents believe that they are not influenced in any way by the advertisements that appear on social media platforms. At the end of the paper the recommendations are formulated based on the research results.

**Key words:** consumer behaviour, social media, social media marketing, Slovakia

**JEL Code:** M30, M31, D12

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# ŽENSKÉ SLUŽEBNICTVO V NOVOVĚKU

## WOMEN SERVANTS IN THE EARLY MODERN PERIOD

**Eva Henzlerová**

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### **Abstract**

This article focuses on the social status of female servants in the middle of 17th century in the royal dowry town Hradec Králové in Bohemia. The main objective of this paper is to explore differences between the status of female and male servants and their position in society. The Serfs register according to their faith from 1651 yields extensive data on serfs in several areas in Bohemia: on their age, profession, religion and marital status. According to List the town Hradec Králové had 1 781 inhabitants. The town of Hradec Králové had large numbers of servants. Female servants formed 68 % of all 226 recorded servants. These were mostly housemaids and cooks, but many also worked on farms (usually as housekeepers or young farmhands). The number of female cooks suggests a better economic situation in Hradec Králové town. Male servants working on farms that belonged to the town's wealthier inhabitants. Children up to 14 worked usually as farmhand but we can assume that girls tended to household chores while the boys were in charge of farm animals.

**Key words:** women servants, households, Hradec Králové, 17th century

**JEL Code:** N33, J19

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# SHARES OF WOMEN BY NUMBER OF CHILDREN EVER BORN, DIFFERENCES IN CZECH CENSUSES 2011 AND 2021

Filip Hon

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## Abstract

The 2021 Census data provides valuable insights into women's fertility patterns. This study examines the distribution of women in the reproductive age based on the number of live births, age groups and education. This contribution shows the difference in percentage points from the 2011 Census too. Up to age group 35–39, childlessness is most common, later shifting to two children as the predominant category. This underscores the enduring appeal of the two-child family model, even for women near the end of their reproductive years. In the 45–49 age group, notable is the rise in childlessness. Analysis reveals a declining trend in higher-order births, with most women having a maximum of three children. However, nuances exist, particularly in education levels. Women with basic and tertiary education see increases in childlessness and having three or more children. University-educated women differ primarily in fertility timing rather than lifelong proportions. Interestingly, among those with tertiary education, childlessness significantly decreases before age 30, offering fresh insights. The assumption of declining fertility with more tertiary-educated females in the population may not hold, which is a subject for further analysis.

**Key words:** fertility, live births, childlessness

**JEL Code:** J11, J13

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**ZAMESTNÁVANIE CUDZINCOV Z KRAJÍN MIMO EÚ V  
KONTEXTE ZMIEN NA SLOVENSKOM TRHU PRÁCE  
EMPLOYMENT OF FOREIGNERS FROM NON-EU COUNTRIES  
IN THE CONTEXT OF CHANGES IN THE SLOVAK LABOUR  
MARKET**

**Romana Hricová – Renáta Madzinová**

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**Abstract**

The labour market is subject to constant changes to which it must adapt. Not only the Slovak labour market has been affected in recent years mainly by non-economic factors - the Covid-19 pandemic and the war in Ukraine. The article is focused on the analysis of the situation on the labour market and employment in the years 2018 - 2023, which reflects changes in social life in Slovakia and abroad. It points to the gradual application of pressure by employers who have been facing labour shortage problems for a long time. The main goal of the article is to identify changes in the labour market of the Slovak Republic and outline possible changes that would have a positive impact on the labour market. To achieve this goal, 2 partial goals were set, the first is a description of legislative changes in the field of employment for the period 2019 - 2022 together with an analysis of employment according to selected indicators. The second sub-goal is focused on the development of changes in the employment of foreigners in the Slovak Republic during the monitored period, together with proposals for improving the current situation.

**Keywords:** foreigners, employment, labour market, workforce

**JEL Code:** J 61, J 24

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# HUMAN CAPITAL PRODUCTIVITY IN RUSSIAN ECONOMY IN THE CONTEXT OF TECHNOLOGICAL REGRESSION

**Ilia Chernenko**

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## **Abstract**

Recent research has shown a growing interest in understanding the effects of geo-economic fragmentation in the post-pandemic era, combined with ongoing geopolitical tensions. This article aims to evaluate structural changes in the productivity of human capital in Russia during the period from 2017 to 2022 and their impact on national technological regression. Methods include Mincer function analysis and adapted Fagerberg's accounting for structural change in human capital productivity. Recent data from RLMS-HSE and Rosstat quarterly microdata are used to analyse human capital and value added across 19 sectors. Findings reveal a concerning trend: the total economic growth rate is 6,8% over the studied period, while change in human capital productivity is even lower, having increased by a mere 5,1%. This gap underscores significant stagnation and depreciation of human capital. Several factors contribute to this pattern, including economic shocks from the pandemic and sanctions, ageing of the population, shortage of skilled labour due to migration in 2022, and reduced access to foreign technologies. The manufacturing sector contributes only 1% to the overall increase in human capital productivity. In summary, recent geopolitical decisions have had negative effects on human capital, resulting in technological regression.

**Key words:** human capital, productivity, structural change, economic fragmentation, technology regression, Russia.

**JEL Codes:** J24, E24, O33

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# AKO UMELÁ INTELIGENCIA ZMENÍ TRH PRÁCE

## HOW ARTIFICIAL INTELLIGENCE WILL CHANGE THE LABOUR MARKET

**Alexandra Jašurková**

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### **Abstract**

The paper focuses on the analysis of the future impact of artificial intelligence (AI) on labour market. Our aim is to assess the potential changes in employment and workforce skills as a result of dramatic advances in AI and automation. Our study combines quantitative and qualitative research methods. We begin with a quantitative approach where we analyze historical data on employment change in the context of AI technology development. This data is complemented by qualitative research that includes information from AI firm stakeholders. We analyze a number of factors that may affect the labor market and identify their relative importance. Our analysis shows that AI will have a significant impact on the labor market, with some professions and industries under significant pressure from automation. At the same time, we identified factors, such as education and workforce adaptability, that will be key to successful adaptation to the new AI-influenced work environment. Based on our findings, we recommend that companies and governments develop strategies for adapting to the new labor market and emphasize the importance of continuous education and retraining of the workforce. We also stress the need for ethical and legal frameworks for the use of AI in the work environment to minimise negative impacts on employment and social cohesion. Study takes a comprehensive look at the impact of AI on the labour market and seeks to identify key drivers and trends. In doing so, we add value to existing research, which often focuses only on single aspects of this complex issue. Our analysis provides a basis for decision-making and policy planning to respond to the challenges that AI brings to the labour market.

**Key word:** AI, labour market, education, human capital transformation

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**KOMPARACE PRACOVNÍCH KVALIFIKACÍ A  
KVALIFIKAČNÍCH POTŘEB VE VYBRANÝCH ZEMÍCH  
OECD**

**COMPARISON OF SKILLS FOR JOBS AND SKILLS NEEDS IN  
SELECTED OECD COUNTRIES**

**Pavla Jindrová – Hana Boháčová**

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**Abstract**

The labour market in individual economies is undergoing constant change, driven by both demand and supply side requirements. These changes are driven primarily by technological innovation in all areas of the national economy. In recent years, this has been particularly the case with the growing importance of digital technologies, robotics and automation, which are often referred to as the fourth industrial revolution - Industry 4.0. The labour market must also respond to these new challenges and it is imperative that it adapts to the new challenges. The workforce must be able to respond to and be prepared for the new challenges. In view of the rapid development of technology, lifelong self-learning is nowadays a necessity in most areas of the economy. The aim of this paper is to compare the skills mismatch of the workforce in selected OECD countries. Attention will also be paid to the suitability of the education received for the job in question, but also to selected skill needs in the labour market in these countries. The situation in the Czech Republic will be examined in more detail.

**Key words:** comparison, skills for jobs, skill needs

**JEL Code:** I24, J21, J24

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# EXPLORING THE NEXUS BETWEEN HOUSING AFFORDABILITY AND SUBJECTIVE WELL-BEING IN CZECHIA AND SLOVAKIA

Veronika Jurčišinová

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## Abstract

In recent years, many factors have been studied in relation to subjective well-being (SWB). The most common research includes indicators such as income, health, work. In addition to these factors, SWB may also be influenced by housing affordability. The aim of this paper is to examine the relationship between housing affordability and SWB in Czechia and Slovakia. It is argued that living in a city is associated with higher SWB due to wider employment opportunities, higher income and better access to services. However, this advantage is often associated with higher housing costs. One of the most important aspects to consider in the relationship between housing and SWB is neighborhood. Living in a disadvantaged neighborhood characterized by higher crime rates may lead to lower levels of SWB, even if the housing is more affordable. Conversely, it is hypothesized that individuals may seek housing in rural areas where housing is more affordable, which may have a positive effect on SWB. In addition, individuals for whom housing is unaffordable may experience stress, which may manifest itself in a variety of health problems. The results of the research indicate how housing policy and housing affordability considerations affect the SWB of individuals in these countries.

**Key words:** subjective well-being, housing affordability, Czechia, Slovakia, stress

**JEL Code:** I31, D14, O18

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# FROM JOHN GRAUNT TO ADOLPHE QUETELET: ON THE ORIGINS OF DEMOGRAPHY

Jan Kalina

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## Abstract

John Graunt (1620-1674) and Adolphe Quetelet (1796-1874) were two important personalities, who contributed to the origins of demography. As they both developed statistical techniques for the analysis of demographic data, they are important also from the point of view of history of statistics. The contributions of both Graunt and Quetelet especially to the development of mortality tables and models are recalled in this paper. Already from the 17th century, the available mortality tables were exploited for computing life annuities. Also the contribution of selected personalities inspired by Graunt are recalled here; the work of Christian Huygens, Jacob Bernoulli, or Abraham de Moivre is discussed to document that the historical development of statistics and probability theory was connected with the development of demography.

**Key words:** history of demography, history of statistics, probability theory, moral statistics, mortality tables

**JEL Code:** J19, Z13, N33

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# THE 2022 ELECTION IN THE UNITED STATES: RELIABILITY OF A LINEAR REGRESSION MODEL

Jan Kalina – Petra Vidnerová – Miroslava Večeř

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## Abstract

In this paper, the 2022 United States election to the House of Representatives is analyzed by means of a linear regression model. After the election process is explained, the popular vote is modeled as a response of 8 predictors (demographic characteristics) on the state-wide level. The main focus is paid to verifying the reliability of two obtained regression models, namely the full model with all predictors and the most relevant submodel found by hypothesis testing (with 4 relevant predictors). Individual topics related to assessing reliability that are used in this study include confidence intervals for predictions, multicollinearity, and also outlier detection. While the predictions in the submodel that includes only relevant predictors are very similar to those in the full model, it turns out that the submodel has better reliability properties compared to the full model, especially in terms of narrower confidence intervals for the values of the popular vote.

**Key words:** elections results, electoral demography, linear regression, reliability, variability

**JEL Code:** C21, C18, D72

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# **ANALYSIS OF THE IMPACT OF WORKPLACE FACTORS STRESS OF EMPLOYEES WORKING IN HUNGARIAN SMALL AND MEDIUM-SIZED ENTERPRISES**

**Peter Karácsony – Győző Szilágyi – Vivien Pásztóová**

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## **Abstract**

Due to the modern world, most people lead a lifestyle in which they encounter stressful situations on a daily basis. In 2020, the worldwide coronavirus epidemic intensified the factors leading to workplace stress even more. Stress is a physical and mental response to internal and external factors affecting the individual's organization. Previous studies have shown that work stress affects 20-30 % of employees worldwide. The aim of our research was to examine the most important stress-causing factors among Hungarian employees. We see the importance of our research in the fact that this kind of research is rarely managed in Hungary, so the results achieved may be of interest to those interested in the topic. During the research, we prepared a questionnaire survey involving 282 employees. The questionnaires were sent to small-and medium-sized enterprises operating in Hungary. Based on the obtained results, we were able to identify 7 factors that influence the employees' sense of stress at work. The most significant of these are the nature of work and tasks, workplace relationships, and the structure of the organization.

**Key words:** stress, employee, workplace, turnover, Hungary

**JEL Code:** J24, J81, M54

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**ANALÝZA VZŤAHU MEDZI MIEROU NEZAMESTNANOSTI  
A VIACERÝMI EKONOMICKÝMI FAKTORMI NA  
SLOVENSKU**

**ANALYSIS OF THE RELATIONSHIP BETWEEN THE  
UNEMPLOYMENT RATE AND SEVERAL ECONOMIC  
FACTORS IN SLOVAKIA**

**Krisztina Károlyi Gaál**

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**Abstract**

The unemployment rate and its relationship to various economic factors represent a key issue for economists, politicians and researchers in the field of social economics. This research focuses on the analysis of the unemployment rate from the point of view of several important socioeconomic factors in the period 2005 – 2022 in the Slovak Republic. Specifically, it focuses on measures of at-risk-of-poverty rate, minimum wage, inequality of income distribution and average annual yearly inflation measured by CPI. The aim is to examine how these factors influence the unemployment rate in the Slovak economy and how they are interrelated. Statistical methods, including correlation and regression analysis, will be employed to identify relationships between unemployment and the aforementioned variables. We hypothesize that a higher degree inequality of income distribution and changes in the minimum wage may have a significant impact on the unemployment rate. This research aims to contribute to a better understanding of the complex economic relationships within the country and help identify areas where changes and improvements may be needed.

**Key words:** unemployment rate, at-risk-of-poverty rate, minimum wage, inequality of income distribution, regression analysis

**JEL Code:** E24, I32, C21

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## SELECTED ASPECTS OF THE ENTREPRENEURIAL POTENTIAL OF SOLE TRADERS IN SLOVAKIA

Alena Kaščáková – Miriam Martinkovičová – Miroslava Knapková

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### Abstract

Entrepreneurship of self-employed persons has a long and strong tradition in Slovakia. The number of self-employed persons also includes 'sole traders' whose activity takes the form of dependent work. This study presents the results of a primary empirical survey that examines and compares selected aspects of the entrepreneurial potential of self-employed and dependent entrepreneurs in Slovakia. Self-reflection on readiness to start a business relates to the necessary skills and knowledge, confidence in one's own abilities, as well as fear of failure. The results show that dependent entrepreneurs are more optimistic, open and confident than independent entrepreneurs. They also report less fear of failure and setbacks. When evaluating the benefits of entrepreneurship, greater autonomy and higher self-confidence are more prevalent among independent entrepreneurs, while higher income and up-to-date information on insurance premiums are more prevalent among dependent entrepreneurs. Dependent entrepreneurs consider the fact that they are not entitled to paid leave to be a disadvantage of entrepreneurship.

**Key words:** solo entrepreneurs, dependent entrepreneurship, entrepreneurial potential, self-reflection of abilities and skills

**JEL Code:** J40, L26

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## Regional Mortality and Health Status in Greece (1990-2020)

Spyridon A. Kontos – Georgios S. Atsalakis

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### Abstract

In this paper we investigate regional mortality and health status in Greece, using data from the European Statistical Office (Eurostat) for the period 1990-2020. Firstly, a logistic function is fitted to the data series of each period life table, in order to estimate and smooth the age specific death rate in older ages. Using these age-specific death rates and through a dynamic model with stochastic simulation, we estimate the health state function across the 13 regions of Greece for each year of study and sex. Through the parameters of the health state function, we estimate the median age at death and the total health state for the population of each life table. Furthermore, a hierarchical cluster analysis is performed on the results of the previous analysis in order to determine possible groupings in the regions of study. The results show an overall increasing of the median lifetime and total health state in Greece, but with significant regional and gender variations. Finally, the study offers interesting results for the mortality and health status during the Greek economic crisis and the subsequent austerity measures (2008-2015).

**Key words:** Greece, Mortality, Stochastic, Clustering, Logistic

**JEL Code:** I1, I15

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**ZMAPOVANIE FAKTOROV, KTORÉ NAPOMÁHAJÚ A  
BRÁNIA INOVÁCIÁM V MALÝCH A STREDNÝCH  
PODNIKOV IKT SEKTORA NA SLOVENSKU**  
MAPPING OF FACTORS THAT HELP AND HINDER  
INNOVATION IN SMALL AND MEDIUM ENTERPRISES OF  
THE ICT SECTOR IN SLOVAKIA

**Enikő Korcsmáros – Renáta Machová – Angelika Csereová – Silvia Tóbiás  
Kosár**

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**Abstract**

Innovation has become an essential competitiveness factor of modern economies and one of the most important conditions for the successful operation of companies. Due to their flexibility, representatives of the SME sector are better able to implement certain innovative ideas in certain areas, but at the same time they also face a big disadvantage in this area, since innovation also requires adequate capital investment. Our research is based on primary data collection in the form of a questionnaire, the purpose of which is to assess the innovativeness of Slovakian micro, small and medium-sized enterprises, and in addition to that of SMEs belonging to the Slovakian ICT sector, that is, to map the distribution and presence between innovative and non-innovative companies. Based on the opinion of the surveyed SMEs, the most motivating factors for innovation are the satisfaction of consumer needs at the quality level and the improvement of quality. However, the most inhibiting factor is the lack of time or the burden of bureaucracy and administration on companies. Based on the results of the research, the study ends with the formulation of conclusions, as well as the selection of further research directions based on the shortcomings of the present research.

**Key words:** innovation, motivating factors, SMEs, Slovakia

**JEL Code:** D23, M21

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**ZHODNOCENÍ MÍRY NEZAMĚSTNANOSTI ABSOLVENTŮ  
ŠKOL NA TRHU PRÁCE ZA OBDOBÍ 2011-2022 -  
CELOREPUBLIKOVÉ A REGIONÁLNÍ SROVNÁNÍ**  
ASSESSMENT OF THE UNEMPLOYMENT RATE OF SCHOOL  
LEAVERS ON THE LABOUR MARKET FOR THE PERIOD 2011-  
2022 - A COMPARISON AT NATIONAL AND REGIONAL  
LEVEL

**Pavla Kořátková Stránská – Josef Košťálek**

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**Abstract**

Every year, the labour market and the education sector focus their attention on school leavers. School leavers are the group of economically active people who find it difficult to enter the labour market. Their employability is influenced by the phase of the economic cycle of a given economy, the overall unemployment rate, the balance or imbalance between labour demand and supply, and the rate of vacancies. The aim of this paper is to assess the unemployment rate of school leavers in the labour market over the last eleven years. The analysis focuses on national and regional comparisons. The number of unemployed school leavers and the unemployment rate of school leavers were chosen as the main parameters for analysis. In order to achieve the aim of the article, research-analytical methods will be used, especially content analysis, which is oriented towards the analysis of texts and the extraction of relevant information from literary sources.

The results of the paper can be used as a basis to show where the employability of school leavers has moved over the last eleven years in terms of numbers and rates of unemployment. The results can also provide options for promoting productivity improvements in a given economy.

**Key words:** school leavers, unemployment rate, education, labour market

**JEL Code:** J21, J24

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# PROBLEMATIKA MIGRAČNÍCH DAT

## MIGRATION DATA PROBLEMS

**Daniela Krbcová**

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### **Abstrakt**

Mezinárodní migrace je jedním z klíčových faktorů populačních změn nejen ve světě, ale hlavně v Evropě. Evropské země čelí problematice stárnutí populace, kdy se současně snižuje počet narozených dětí a současně se zvyšuje počet starších osob. Vzhledem k těmto demografickým změnám v Evropě je pro každý stát důležité mít spolehlivý odhad celkové populace na svém území. Cílem každého státu je schopnost předvídat co nejlépe populační změny na svém území, tedy i předpovědi populačních změn způsobených migrací.

K předpovědím migrace jsou zapotřebí spolehlivá migrační data a spolehlivý zdroj, což je hlavní problém, se kterými se jednotlivé země potýkají. Migrační data často pochází z různých zdrojů a většinou jsou tato data neúplná, chybějící, nepřesná apod. Důvodů může být několik. Cílem příspěvku je nastínit problematiku migračních dat a představit některé metody a doporučení, jak s takovými daty nakládat a uvést několik příkladů porovnání vzájemné migrační bilance dvou zemí mezi sebou a odhalit možné příčiny tohoto nesouladu.

**Klíčová slova:** mezinárodní migrace, imigrace, emigrace, migrační data, nesoulad

**JEL Code:** J1, J6

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**PRAX KOMUNITNÉHO PLÁNOVANIA SOCIÁLNYCH  
SLUŽIEB V MESTÁCH A OBCIACH NA SLOVENSKU**  
**PRACTICE OF COMMUNITY PLANNING OF SOCIAL  
SERVICES IN CITIES AND TOWNS IN SLOVAKIA**

**Martina Kubišová – Erika Ľapinová**

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**Abstract**

The obligation of community planning of social services in Slovakia is legislated in the Act on Social Services for all municipalities and cities without exception. However, the practice of community planning of social services is very diverse, given the size and socio-economic situation of municipalities, the demographic composition of their population and other specifics that we will name in this contribution. Community planning of social services is also practiced in Czechia. In contrast to Slovakia, the Ministry of Labor and Social Affairs of Czechia directs it methodically. In our contribution we bring closer the key elements of the community planning process, we will focus on factors that determine the same level and character of community planning in Slovak municipalities as well as factors that helped ensure the contribution to reverse the situation. The goal is to support the use of community planning of social services in local governments as an effective tool for management and development, not only in the social field in the narrower meaning, to increase the efficiency and effectiveness of this process, to support a greater level of awareness in general about community planning and, consequently, to support a public engagement in terms of this process.

**Key words:** community planning of social services, local municipalities, Slovakia, Czech Republic

**JEL Code:** H7: State and Local Government • Intergovernmental Relations, H79 Other

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# ODBORY A REPREZENTACE ZAJMŮ OSOB SAMOSTATNĚ VÝDĚLEČNĚ ČINNÝCH V ČESKÉ REPUBLICĚ

## TRADE UNIONS AND REPRESENTATION OF THE INTERESTS OF THE SELF-EMPLOYED PEOPLE IN THE CZECH REPUBLIC

**Renata Kyzlinková**

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### **Abstrakt**

The paper discusses the possibilities of collective representation of self-employed persons. The gradual erosion of standard labour relations and an increasingly heterogeneous composition of the workforce meaning work organisation, employment contracts etc. raises a debate about the adequacy and effectiveness of structures and methods of collective representation. Trade unions, if they do not want to face a decline in their membership base, must adapt to the new realities of the labour market, to find new strategies and to accept workers who are not tied to a single company's workplace. The aim of this paper is to discuss the heterogeneous nature of the status of self-employed workers in the new labour market conditions and the resulting need for collective representation of their interests. The flagship sector in this regard is the culture and entertainment industry, where there is a relatively long history of unionisation of workers, particularly in the US and the UK. The paper will thus offer, in addition to an overview section, views and attitudes towards collective representation of interests by workers in the audiovisual industry in the Czech Republic. A questionnaire survey to determine the quality of working life of audiovisual workers and, among other things, the respondents' interest in collective bargaining, was conducted at the end of 2022. A total of 912 completed questionnaires were received.

**Key words:** trade unions, self-employed, bogus employment, audiovision, collective representation

**JEL Code:** J51, J52, J82, J83

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**VALIDITA A RELIABILITA DOTAZNÍKOVÉHO  
ZISŤOVANIA O MOTIVÁCII ŠTUDOVAŤ NA SLOVENSKU  
VALIDITY AND RELIABILITY OF QUESTIONNAIRE SURVEY  
ON MOTIVATION TO STUDY IN SLOVAKIA**

**Viera Labudová - Iveta Fodranová**

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**Abstrakt**

The research area of this study is international education, and the main goal of the study is to identify and quantify the factors that have a determining effect on the decision to study at Slovak universities. The main research instrument (questionnaire) used in this investigation consisted of 14 items. Respondents expressed their opinions on a 5-point Likert scale. The construct validity and reliability of the questionnaire were tested on a data set of 233 people. SAS Enterprise Guide and SAS Viya statistical package programs were used in the analysis of the data. According to the results obtained in the study, it was found that the information dimension was gathered under three factors (Finances and image, Culture and networking, and Professional growth), and it could explain 48.47% of the total variance. The reliability of the questionnaire and its fourteen subscales was verified using the Cronbach alpha coefficient (Cronbach's- $\alpha = 0.7362$ ). Confirmatory factor analysis was used to test the fit of individual models with the data. The four most used measures were used: the chi-square divided by the degrees of freedom, Standardized Root Mean Square Residual (SRMR), Root Mean Square Error of Approximation (RMSEA), and Comparative fit index (CFI).

**Kľúčové slová:** dotazník, validita, reliabilita

**JEL Code:** I23, C02

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# REQUIREMENTS FOR EMPLOYEES IN THE DIGITAL ECONOMY

**Tatiana Lapina - Tatiana Stuken - Olga Korzhova**

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## **Abstract**

The article considers digital competencies of employees necessary in the digital economy, in individual organizations. We evaluated these competencies based on the questionnaire "DigComp 2.0: The Digital Competence Framework for Citizens". The data of the authors' research of employees of industrial enterprises of the Omsk region were used as an information base. The hypothesis of the study was that the demand for digital competencies exceeds their supply, and both the demand and supply of digital competencies differ by competence groups. The method of analysis was descriptive statistics and the ANOVA modulus averages. In the study, we compared the actual and required level of development of digital competencies of employees. The hypotheses of the study were confirmed. As a result, there were identified groups of digital competencies, the demand for which is relatively high, as well as groups of competencies, the demand for which is lower compared to other competencies. There were also identified groups of the most developed digital competencies. It was concluded that there is no symmetry of supply and demand for digital competencies.

**Key words:** competences, digitalization, labor market

**JEL Code:** J24, J23

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**STARŠIA PRACOVNÁ SILA NA SLOVENSKU A V EURÓPE  
A AGE MANAŽMENT AKO NÁSTROJ PODPORY JEJ  
ZAMESTNÁVANIA**

**OLDER WORKFORCE IN SLOVAKIA AND EUROPE AND AGE  
MANAGEMENT AS A TOOL TO SUPPORT ITS EMPLOYMENT**

**Erika Ľapinová**

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**Abstract**

In our contribution, we want to pay attention to the older workforce, we observe the differences between the older workforce and other age categories of employees. The working abilities of older workers are often assessed stereotypically, when hiring or during the work process (e.g. in the case of education, upgrading of qualifications) they are often discriminated against other colleagues. Their needs in working life are often not respected and taken into account. In the analytical part, we will describe the current employment rate of older workers (50+) in the V4 countries and the rest of Europe and we monitor the development of the employment of these employees over time with using Eurostat database. The last part of the contribution is oriented to the methodological-conceptual pillars of the issue of age management at the micro level (at the level of employers). The issue of employing an older workforce is significantly more developed in practice and theory in the world than in Slovakia or V4 countries. It requires development in our countries both at the research-empirical and methodological-practical level.

**Key words:** older workers, age management, strengths and weaknesses of older workers

**JEL Code:** J1 Demographic Economics; J14 Economics of the Elderly • Economics of the Handicapped • Non-Labor Market Discrimination

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# REGIONAL SUSTAINABLE DEVELOPMENT AND HUMAN RESOURCES REPRODUCTION: IS THERE ANY COMMON GROUND?

Victor Latushkin – Oksana Shubat

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## Abstract

Human resources reproduction in Russia is complicated and keeps deteriorating. The purpose of the paper is to examine relationship between sustainable development and human resources reproduction in Russian regions. For this study we analyze indicators of human resources reproduction for all Russian regions and regional sustainable development indices of leading Russian rating agencies. The analysis yielded a number of results. First, ranks of regions in different rankings do not correspond to each other. Second, sets of indicators used in the rankings of regional sustainable development are very different and poorly represent human resources reproduction. Third, regional sustainable development doesn't correlate with human resources reproduction. These results allow us to draw some conclusions. First, subjective choice of indicators used in the indices and high variability of social and economic situations in the different regions raise a question about the validity of regional sustainable development assessments. Second, the theoretical concept of regional sustainable development requires some updates. It is necessary to take into account prevalent demographic trends and specifics of human resources reproduction in the regions. Third, achieving regional sustainable development should not be seen as dominating or preemptive goal for the region.

**Key words:** regional sustainable development, sustainable development indices, regions of Russia, human resources reproduction

**JEL Code:** Q01, R58, J11

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# SUBJECTIVE WELL-BEING, ASPIRATIONAL BIASES, AND ETHNICITY IN SLOVAKIA

Boris Marton – Tomáš Želinský

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## Abstract

In accordance with the theory of socially determined aspirations, an optimal level of aspirations is believed to be situated at a reasonable distance from an individual's current situation. Deviating from this optimal level may lead to aspirational biases, encompassing aspirations failure, when individuals do not aspire to reach their potential, and an aspirational gap, arising when socially generated aspirations surpass an individual's current socio-economic status.

This study seeks to investigate and compare the prevalence of aspirational biases within both the majority population and the Roma minority in Slovakia. We contribute to the existing literature by explicitly examining the relationship between subjective well-being (SWB) and aspirational biases. To operationalize these biases, we calculate the relative difference between individuals' income aspirations and their current disposable income. We show that these biases are strongly correlated with subjective well-being. In both contexts, we report a negative correlation between aspirational gap and SWB, and a positive correlation between aspirations failure and SWB.

Our analysis draws from the 2018 EU-SILC survey. Additionally, we leverage a dataset acquired upon request from the Office of the Slovak Government Plenipotentiary for Roma Communities, aimed at describing the living conditions of Roma residing in marginalized communities within Slovakia.

**Key words:** Subjective well-being, aspirations, aspirational biases, ethnicity, Slovakia.

**JEL Code:** D31, I31, J15

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## THE POSSIBILITIES OF GAMIFIED KNOWLEDGE TRANSFER IN HUNGARIAN SECONDARY EDUCATION

Adriana Mezeiova – Szonja Jenei – Szilvia Módosné Szalai – Róbert Nagy

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### Abstract

Successful knowledge transfer plays an important role in organizations and education, as gamification offers an effective approach. The aim of the study is to explore the playful form of knowledge transfer within knowledge management, presenting the concept of gamification and the Probst model. We posed three primary research questions. What subjects are taught in Hungarian high schools using the playful method? How popular are commonly used methods among respondents? Do preferences for different playful methods differ depending on students' ambitions? To answer these questions, we analysed 171 questionnaires and 3 professional interviews. The teachers provided insight into their teaching techniques, experiences and opinions. The results show that history stands out as the subject that uses playful methods the most, while mathematics lags behind significantly ( $p < 0.01$ ). Computer games became the second most popular method. A key observation is that students with higher academic goals clearly prefer certain methods, especially computer games, compared to their peers with milder ambitions. This difference is statistically significant ( $p < 0.05$ ). In conclusion, proposals were made that could contribute to a more efficient and beneficial education for students by investing in human capital.

**Keywords:** Knowledge management, gamification, innovative knowledge transfer, gamified education, competence development

**JEL Code:** D83, I20, I21

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## EMPLOYEE SATISFACTION IN OPEN OFFICE ENVIRONMENT

Mária Roberta Nagy

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### Abstract

The research was made for exploring employee satisfaction in new open office environment at a multinational company, after the decision of the management about the refurbishment of the European offices. As a result, the Czech office should have been transformed into an open office area. The goal of the research was to measure employee satisfaction in the new work environment and to make a proposal for management team for further office investments. For exploring the situation, a primary research was conducted among Czech employees of the company, if they are satisfied with the realized new work environment. The survey was done by in-depth interviews using an interview questionnaire. As a result of the research it may be stated that employees are generally satisfied with their working environment. They reported their needs regarding wider space and extended own work environment and about more meeting rooms and rest zones. Respondents noticed excessive noise and direct and rapid communication between each other during operation.

**Key words:** employee, human resource, organizational behaviour, personnel management

**JEL Code:** M12, D23, 015

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# THE IMPACT OF THE COVID-19 PANDEMIC ON THE CAPITAL STRUCTURE, LIQUIDITY AND PROFITABILITY OF SMEs OPERATING IN THE HUNGARIAN HOSPITALITY AND IT SERVICES SECTORS

Tamás Németh – Anna Dunay – Mihály Hegedűs – László Pataki

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## Abstract

Hospitality and IT services are two sectors that have been heavily affected by the COVID-19 pandemic. The impact was negative on hospitality and positive on IT services. Our research, which examines the capital structure, liquidity, and profitability of micro, small, and medium-sized enterprises operating in these sectors, as well as their mutual relationships, is unique in that it takes into account differences in the size of enterprises, as well as statistical and regional differences. During the analysis of the relationship between capital structure and liquidity indicators, we relied on the balance sheet and income statement data of double-entry bookkeeping companies subject to corporate tax, taking into account the territorial location of the companies. The data of the SME sector report for 2019-2021 required for the capital structure analysis was provided by the Crefoport database. The database contains the data of 1967 enterprises. The sample was narrowed down exclusively to enterprises in the 56: Hospitality and the 62. We determined the correlation between capital structure and profitability indicators using correlation analysis. Based on the results obtained, we performed a comparative evaluation analysis examining the effects of the pandemic. During our research, we established that companies operating in the information technology service sector showed better liquidity than in the hospitality sector. We proved that the relationship between capital structure and profitability is closer in the case of larger companies operating in the Northern Great Plain and Central Hungary regions, as well as companies operating in the hospitality industry. We observed that the increase in equity only slightly improved profitability.

**Key words:** capital structure analysis, profitability, correlation analysis, financing decisions

**JEL:** G300, G320, M400

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# CHANGES OF THE AGE STRUCTURE OF ENTREPRENEURS IN SLOVAKIA COMPARED TO CZECH REPUBLIC

Fóthy Noémi

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## Abstract

Small and medium-sized enterprises (SMEs) play a vital role in the economy of both the Czech Republic and Slovakia. They account for a significant share of GDP and employment in both countries. Entrepreneurs are the driving force behind SMEs, and their qualities can have a major impact on the success of their businesses. It is important to examine the demographic characteristics of entrepreneurs, such as their age, gender, and education level, in order to understand the entrepreneurial landscape in a country. This information can be used to develop policies and programs to support entrepreneurs and promote economic growth. Our research goal of analyzing the age group distribution of entrepreneurs in the Czech Republic and Slovakia and its changes over the past 5 years is very relevant. By understanding how the age structure of entrepreneurs is changing, policymakers can better design programs and initiatives to support entrepreneurs of all ages. Young entrepreneurs are often the most innovative and risk-taking, and they can play a key role in driving economic growth. However, young entrepreneurs also face several challenges, such as lack of experience and access to financing.

**Key words:** age structure, entrepreneurs, Slovakia, Czech Republic

**JEL Code:** J10, J11, L26

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# HUMAN CAPITAL IN MOLDOVA IN THE CONTEXT OF ACTUAL DEMOGRAPHIC REALITIES

Irina Pahomiii – Tatiana Tabac

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## Abstract

Moldova is now facing large depopulation mainly due to migration and high premature mortality, which both quantitatively and qualitatively affect human capital. The aim of this study is to comprehensively evaluate the influence of migration and premature mortality on Moldova's human capital development. International migration impact was estimated based on net migration and age-specific net migration rates by sex. The level of mortality was assessed through the proportion of deaths before age 65, ASMR, and lifespan disparity. Net migration represents almost 10% of the population in the last eight years, and 98.9% of the total net migration refers to the population aged 0-39. Annually, the losses determined by premature mortality represent 1.5-2% of the population up to 65 years. Most affected remained males. Return migration cannot compensate for the losses caused by migration and premature mortality. The direct losses in human capital must be cumulated by the indirect ones, translated into loss potential implications in socio-economic development.

**Key words:** human capital, international migration, return migration, premature mortality, Moldova

**JEL Code:** J11, J24, R23

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## FERTILITY BY MARITAL STATUS IN SLOVAKIA

**Karol Pastor**

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### **Abstract**

In Slovakia, similarly as in most countries, both fertility and nuptiality have been radically declined in recent decades. At the same time, the number of children born outside marriage has grown both in relative and absolute figures (from 7% in 1990 to 41.2% in 2022). Despite it, as the paper shows, the close link between marriage and fertility persists, at least in the framework of the Slovak population. Thus, the recent decrease in births can be explained by the decrease in nuptiality. Therefore, population losses caused by a decrease in fertility cannot be simply replaced by the increasing number of births out of wedlock (at least in the near future). Marriage (and marital status) remains an important factor of demographic development. The article offers an explanation for why the more children born out of wedlock, the fewer children born overall. The study is based on empirical data collected by the Statistical Office of the Slovak Republic. The results are consistent with investigations of other authors

**Key words:** Slovakia, fertility, nuptiality, marital status, illegitimacy rate.

**JEL Code:** J12, J13.

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**SEKUNDÁRNA ANALÝZA EKONOMICKÝCH  
UKAZOVATEĽOV KRAJÍN VYŠEHRADSKEJ ŠTVORKY  
V TIENI RUSKO-UKRAJINSKÉHO KONFLIKTU  
SECONDARY ANALYSIS OF THE ECONOMIC INDICATORS  
OF THE VISEGRAD COUNTRIES IN THE SHADOW OF THE  
RUSSIAN-UKRAINIAN CONFLICT**

**Vivien Pásztóová**

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**Abstract**

After the coronavirus epidemic, the armed conflict between Russia and Ukraine led to new economic and social problems on a global scale. Visegrad countries faced significant challenges, which have caused trade and livelihood difficulties due to their dependence on Russian natural gas imports. The study, which is based on secondary research, presents the examined problem primarily by relying on relevant domestic and international literature. In the course of the secondary research, the data collected from reliable databases and statements are studied with a comparative analysis in relation to the Visegrad countries. A parallel can be drawn between the literature and the secondary data shown. In each of the allied countries, economic indicators shown a downward trend, consumer price inflation grow by around 10%, causing existential problems at the national level. Based on the reports studied in terms of quality of life, the Czech Republic is the most liveable country, while Hungary has the lowest quality of life.

**Key words:** Visegrad countries, economic situation, Russian-Ukrainian armed conflict

**JEL Code:** B22, H12, H56

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# DEMOGRAPHIC AND ECONOMIC SHOCK EFFECTS OF THE FIRST YEAR OF WAR IN SUBCARPATHIAN REGION OF UKRAINE.

Gábor Pataki – Robert Bacho

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## Abstract

Due to the 2022 Russian invasion, Ukraine suffered significant socio-economic damage. This study focuses on Subcarpathia, Ukraine's westernmost region, which, though not directly involved in the conflict, experienced substantial economic and social repercussions.

In the autumn of 2022, a survey was conducted in the Ukrainian-Hungarian border region near the authors' residence, home to a sizable Hungarian minority (12% of the regional population). Migration analysis revealed three categories within this community: 1) those who moved to safer parts of Hungary or other European countries; 2) those who temporarily fled but wish to return; 3) those who had previously emigrated. Various factors, reasons, and consequences were examined among these categories.

The research showed that besides the 2022 Russian invasion, Ukraine's prior economic challenges, the plight of the national minority, and other factors contributed to population emigration. Additionally, we explored factors that kept the local population in place, such as housing, employment, social, and psychological reasons.

While acknowledging social factors, our primary focus was on the economic aspect. Thus, this article evaluates the income, financial status, and changes caused by the war among the target group.

The demographic and economic analysis was based on a questionnaire survey, in the framework of which we examined more than 600 respondents, most of whom remained in Subcarpathia after the war. The research clearly indicates that the prolonged wartime situation increases the permanent settlement of emigrants (the main target group being in Hungary), and internal refugees are also planning to stay in the Subcarpathian region in the long term.

**Key words:** war in Ukraine, Subcarpathia, Migration, Hungarian minority, Economic impacts.

**JEL Code:** J11, J15, C15

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## MONITORING IN SOCIAL SERVICES FROM THE ELDERLY CLIENT'S PERSPECTIVE

Ondřej Pavelek - Marie Sciskalová

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### Abstract

This article examines the challenges posed by an aging population for social service providers. The limited number of social workers struggles to keep up with rapid population growth, potentially increasing care costs. Modern technologies, such as surveillance cameras (CCTV), are seen as essential for improving social service efficiency. As the elderly population grows and treatment options advance, collaboration between clients, staff, and technology is crucial. The study explores the use of CCTV in elderly care facilities and identifies legal concerns. It focuses on client experiences, highlighting privacy perceptions and concerns. Clients often worry about privacy breaches and misuse of CCTV, but many lack interest, likely due to limited awareness. Effective communication from social service providers is necessary. Legislation plays a critical role, protecting client rights. Consent for CCTV use should be freely given, with clients well-informed about risks. Compliance with these legal requirements varies in social care institutions. This article assesses client perceptions, information dissemination, and consent adequacy regarding CCTV in social services. Research spans Moravian-Silesian care facilities, involving 233 respondents—212 clients and 21 staff members.

**Key words:** Aging Population; Social Service Providers; Surveillance Cameras; Client Perceptions; Legislative Compliance.

**JEL Code:** K10, H55

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# **SUBJECTIVE POVERTY LINES AND THE YODEN INDEX: INSIGHTS FROM SLOVAK AND CZECH DATA**

**Katarína Plačková – Tomáš Želinský**

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## **Abstract**

Understanding the evolving trends in key socio-economic indicators is crucial for shaping public opinion and informing policy decisions. However, the European Union lacks official subjective poverty statistics, despite recognizing their importance. In addition, the absence of the Minimum Income Question (MIQ) in the EU-SILC survey from 2021 onwards poses a challenge in monitoring subjective poverty levels in the EU.

In this study, we utilize a question from the EU-SILC survey that assesses respondents' ability to make ends meet with their household income, providing an avenue to estimate SPLs.

We demonstrate the application of the Youden index to the context of subjective poverty, defining SPLs as the income level that distinguishes subjectively poor households from non-poor households. However, multiple approaches can be employed to determine the optimal cutpoint based on the Youden index, making the establishment of a SPL less straightforward. Using data from the Slovak and Czech subsamples of the EU-SILC survey, we compare SPL estimates derived from different procedures, including simple maximization, maximization based on LOESS, spline and kernel smoothings, and bootstrapped samples. We further compare these estimated SPLs to those based on the MIQ, providing valuable insights into the subjectivity of poverty measurement.

**Key words:** Subjective poverty, Youden index, EU-SILC, Slovakia, Czechia.

**JEL Code:** I30, I32

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**PROBLÉMY FORMOVANIA ĽUDSKÉHO KAPITÁLU  
V PODMIENKACH VOJNY A POVOJNOVÉHO  
ZOTAVOVANIA EKONOMIKY.**

**PROBLEMS OF HUMAN CAPITAL FORMATION IN THE  
CONDITIONS OF WAR AND POST-WAR RECOVERY OF THE  
ECONOMY.**

**Iryna Reshetnikova – Vanda Lieskovská – Katarina Petrovčíková**

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**Abstract**

The article analyzes the demographic situation in Ukraine and Slovakia after Russia's military invasion of Ukraine. Subsequently, the situation is described one and a half years after the outbreak of the war. Attention is focused on several aspects: population decline, mass migration of people of productive age, decline in living standards and deterioration of mental health. The mentioned facts influence the reduction of the quantitative, but also the qualitative level of human capital in the long-term perspective. The war leads to an increase in the number of persons with disabilities, the motivation for education and improving the skills of young people decreases. Mental mood and long-term pressure limit the creative desires of the population. Based on the above analyses, an unsatisfactory situation is predicted, which will worsen if the military operations are prolonged. The post-war economic recovery of European countries can be lengthy due to the financial exhaustion of European funds and the demographic crisis caused by the war.

**Key words:** war, demography, consequences of war, human capital

**JEL Code:** J 15, J 17, J 61

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# **PUBLIC INVESTMENTS IN FERTILITY AND THE COST OF RAISING A CHILD: A COMPARATIVE ANALYSIS**

**Oksana Shubat – Andrey Setyaev**

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## **Abstract**

One of the key problems of modern Russia is depopulation, which is observed against the backdrop of a declining birth rate. The ongoing efforts of the state related to financial support for families do not give a positive result. The purpose of the paper is to assess and comparatively analyze government investments in fertility and expenditures on children by families. To conduct the research, we used data from official Russian population and labor market statistics, results of national sample observation of reproductive plans of the population, open data of the Federal Tax Service of Russia. The analysis produced estimates of the amount of public investment in the birth and maintenance of a child up to the age of 17 years. We also obtained estimates of expenditures on children by families (for different numbers of children in the family). The material costs of the family are not compensated (financially) in the future and are not covered by the state from the profits from investments in fertility. Based on the results obtained, ways to improve the effectiveness of government measures aimed at increasing the birth rate were proposed.

**Key words:** birth rate, investments, raising a child, economic theory of fertility

**JEL Code:** J13, H72

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## FIND THE HEALTHY LIFE YEARS LOST (HLYL)

**Christos H Skiadas -- Yiannis Dimotikalis**

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### Abstract

We are happy that today we can present an advanced form of a study including new findings based on MC Wolfson paper. A first approach was based on the Laditka-Wolf (1998) results. For more information consult Janssen & Skiadas 1995, Skiadas & Skiadas 2010, 2014, 2018 a,b and 2020 a,b,c, Skiadas 2023, Dimotikalis & Skiadas 2023, Skiadas & Dimotikalis 2023. Following the Michael C. Wolfson (1996) study for Canada 1990-1992 an interesting finding emerged. The Healthy Life Years Lost (HLYL) for Canada are calculated for males, females and both sexes. Though the Michael C. Wolfson paper was formed in order to find-estimate the Healthy Life Expectancy (HLE), he also provides hints on estimating the HLYL.

We also have provided a methodology to estimate the HLYL via the formula:

$$HLYL = b_x = \max \frac{xq_x}{\int_0^x q_s ds}$$

In all applications for males, females and both sexes our and Wolfson estimates coincide to the same maximum for HLYL.

See <https://link.springer.com/book/10.1007/978-3-031-28697-1> for details and ask about the related programs in Excel from the authors.

**Key words:** Life Expectancy, Healthy Life Expectancy, Life Tables, Health Parameters, Healthy Life Years Lost.

**JEL Code:** I15, I18, J1

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# ĽUDSKÝ KAPITÁL A JEHO DIMENZIE V EÚ

## HUMAN CAPITAL AND ITS DIMENSIONS IN THE EU

**Beata Stehlikova – Kristian Ujvary – David Sklenar**

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### **Abstract**

The aim of the paper is to analyse human capital quantified using Human Capital Index (HCI) in EU. Also, to identify states with similar values of HCI dimensions. From the point of view of the type of data used, it is quantitative research. We quantify the dependence between HCI, its dimensions and selected factors using Spearman's correlation coefficient. HCI shows a significant positive dependence with all three dimensions, also with GDP in PPP, and a negative monotonic dependence with the share of the population below the threshold of 60 percent equivalent income. Using cluster analysis, we created groups of states with similar values of the investigated factors. The results show that there are differences within the analysed characteristics within the EU. We identified two clusters. A more significant difference is in the dimension of education. Policymakers could use the knowledge gained to reduce inequalities in education. The results prove that in the future, more investments in the support of education, especially its quality, will be needed as part of the policies.

**Key words:** education, HCI, cluster analysis, EU

**JEL Code:** I1, I2

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# QUALITY MANAGEMENT OF PUBLIC SERVICES - THE APPROACH OF MANAGERS AND EMPLOYEES

Mindaugas Strumskis – Arturas Balkevicius

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## Abstract

Service quality is one of the most important factors ensuring customer satisfaction; therefore, managing it is one of the priorities in all organizations and can be achieved by implementing a quality management system (QMS). Various studies have observed that the success of the implementation of QMS depends on the country's public administration traditions and on the management heritage of the organization. The study examines QMS based on ISO 9001 standard that is implemented and institution certified more than 15 years ago. During this period several recertification and annual external and internal audits were carried out, any nonconformity identified. However, the survey of employees and managers showed that there is a wide range of views on the benefits of QMS for the organization, from the view that it is very important to the view that it does not create any value. The purpose of the study was to determine the reasons for the mentioned difference in attitudes, and the conditions that must be met to ensure value creation. The research is based on the survey data of the institution's employees and primary and secondary managers.

**Key words:** quality management, audit reports

**JEL Code:** M42, M14

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## INTERNET USE IN THE WORKPLACE: INEQUALITY OF OPPORTUNITY AND ITS CONSEQUENCES

Mindaugas Strumskis – Arturas Balkevicius

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### Abstract

The study based on Russian data tests hypotheses about the existence of gaps in the Internet use by employees according to gender, age and educational criteria and assesses the impact of these gaps on the position of workers in the labor market. Accordingly, the inequality of opportunities to use digital technologies in the workplace was assessed at the first stage of the study, and the consequences of this inequality were assessed at its second stage.

Regression analysis with control of characteristics of employees and workplaces showed that, other things being equal, women, workers under 35 with higher education are more likely to use the Internet for work purposes. The use of the Internet for work turned out to be a positive statistically significant factor in the Mincer salary equation and in the logistic regression equations that assessed job satisfaction in general, working conditions and career opportunities. These results are important not only from the standpoint of developing programs to improve digital literacy and accessibility of digital infrastructure, but also the policy of personnel management, its involvement and retention.

**Key words:** labor market, digital divide, digitalization of the economy

**JEL Code:** J24, J31

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# **WORKING TIME FLEXIBILITY IN SHIFT REGIMES: AN ANALYSIS OF SHIFT PLANNING SYSTEM IN A SELECTED AUTOMOTIVE COMPANY**

**Roman Urban – Jozef Durian – Nela Urbanová – Alexandra Timofeeva**

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## **Abstract**

Shift work is a prevalent practice in many industries, including the automotive sector, where continuous operations are necessary to meet production demands. The automotive industry is synonymous with constant production demands, as manufacturing processes often operate 24/7. As such, the conventional fixed working time hours model may no longer be optimal. However, the rigid nature of shift work can often lead to challenges in maintaining work-life balance and employee job satisfaction. The paper examines the concept of working time flexibility in shift regimes, with a particular emphasis on the shift planning system. The objective is to explore the benefits and challenges associated with implementing flexible working hours in a shift-based environment. The study draws on relevant literature from the field of human resource and workforce management, with an emphasis on articles indexed in the Web of Science or Scopus and on own analysis of a selected automotive company. The aim of the paper is to suggest shift planning recommendations enhancing overall job satisfaction and company performance in a selected automotive company.

**Key words:** working time, flexibility, shift work, job satisfaction, company performance

**JEL Code:** J22, J53, J81

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# LIDSKÝ KAPITÁL A POZIČNÍ INVESTOVÁNÍ

## HUMAN CAPITAL AND POSITIONAL INVESTMENT

**Radim Valenčík - Petr Mach**

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### **Abstract**

Positional investing is an important social phenomenon that must be taken into account in addressing a variety of issues, including the design and implementation of reforms related to the acquisition, preservation and use of human capital. It allows one entity to turn its property or income superiority into instruments, conditions or means of discrimination against another entity. It is the main reason why investment opportunities in human capital are not exploited according to their rate of return in the context of the problems of financial market development. Through the tools of modelling and positional investment analysis, we show the interrelationship of the most important differences between reforms that contribute to increasing the efficiency of the system and those that have the effect of not only reducing the efficiency of the system but also exacerbating relations in society. This depends both on how the reforms are designed and on what forms of positional investment have developed in a given social system. One important contribution is the definition and use of the neutrality function of positional investment.

**Key words:** Human capital, Nash bargaining problem, positional investing, positional investing neutrality function

**JEL Code:** C71, J24

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**UMĚLÁ INTELIGENCE = FYZICKÝ, NEBO LIDSKÝ  
KAPITÁL?  
ARTIFICIAL INTELLIGENCE = PHYSICAL OR HUMAN  
CAPITAL?**

**Radim Valenčík – Jan Mertl**

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**Abstract**

Is artificial intelligence (AI) physical or human capital? The answer to this question is directly related to the decision whether to tax the work of robots or what to focus the education system, and especially its top form, i.e. university education, on so that it develops specifically human and therefore AI-irreplaceable abilities, i.e. specifically human capital. The paper is based on the assumption that there are specifically human and therefore AI non-substitutable human capabilities. These capabilities are identified, showing the importance of imagination, conceptual cognition and other specifically human components of the psyche. It then focuses on locating and describing as precisely as possible the abilities that are most significant in terms of the current type of AI and its improvement. Based on this, it formulates some practical conclusions. Within this, the idea of the ontological basis of the distinction between AI and human intelligence is also formulated. In the preparation of the paper, communication with one of the commonly available AI variants (BING) was used.

**Key words:** human capital, physical capital, artificial intelligence (AI), education, imagination.

**JEL Code:** A13, I21, J24

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## PLATFORM WORK IN THE CZECH REPUBLIC

Soňa Veverková - Jana Váňová

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### Abstract

Paper examines Czech digital labour platforms and their relationship to their workers. Almost 100% of Czech digital labour platform workers are self-employed; while some digital labour platform cases indicate false (bogus) self-employment, others do not. When deciding whether false self-employment is involved, it is absolutely necessary to study the terms and conditions of such platforms, which serve to regulate the relationship between the digital labour platform, the worker and, possibly, the client. The terms and conditions indicate the degree of superiority of the digital labour platform and the subordination (dependency) of the worker, i.e. the extent of the dependent work signs. This is within the competence of State Labour Inspectorate which has the tools required to detect and sanction the performance of dependent work outside an employment relationship. The paper further proposes non-legislative solutions that impact digital labour platforms under Czech conditions in such a way that they themselves consider whether they are in fact employers or only intermediaries who can use self-employed contractors.

**Key words:** digital labour platform, platform workers, platform work, self-employment

**JEL Code:** M21, M54, 031

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# DEMOGRAPHIC DEVELOPMENT OF SOCIETY, THE PROCESS OF INTERGENERATIONAL EXCHANGE AND SOCIAL CHALLENGES

**Jarmila Vidová**

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## **Abstract**

Human society is constantly evolving. These developments bring many new things to which we are constantly adapting to maintain a state of equilibrium. While on one side of the world demographic development has a positive effect, on the other side it is the opposite. Developing countries are completing the process of demographic revolution. In developed countries, the number of people of retirement age who will be dependent on care due to aging is increasing. These countries must focus on promoting healthy and active ageing. In the article, we first deal with demographic processes. Global developments are reflected in changes in the proportion of the population living in rural and urban areas. We observe significant changes in the age structure of the population and the possibilities of supporting intergenerational belonging and responsibility. At the same time, we use examples of good practice to show how some countries use modern technologies. These technologies will enable older people to remain autonomous, able to lead independent active lives for longer and feel safer. Understanding the causes and consequences of demographic changes will allow us to better manage their consequences and take advantage of opportunities for future generations.

**Key words:** demographic development, innovations, new technologies, population growth, social challenges

**JEL Code:** I31, J16, J18

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# STÁRNUTÍ POPULACE A KRIMINALITA

## POPULATION AGING AND CRIME

**Hana Vykopalová**

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### **Abstract**

Among the most discussed questions of a demographic nature are the aging of the population and its accumulation in cities, accompanied by other social changes such as globalization and commodification. Over time, the characteristics of urban parties are constantly changing to match emerging co-marketed products for sustainable development, and life is also changing with regard to sustainable social development. With the size of settlements to clashes of cultures, interests and goals, but also territorial requirements and urban planning requirements. Spatial changes and changes in urban planning are accompanied by changes in social bonds, relationships to values, to family, to solidarity change, the meanings of places and urban spaces that are historically connected to the city and form part of the city's cultural memory change. By improving health care and lifestyle, human debt is increasing and the age of the elderly population is increasing numerically. With the extension of human life, the length of working life also increases, and activities previously more associated with the productive age, such as crime, move to the post-productive age. Residents of the post-productive age are no longer perceived only as victims of crime, but also appear more often as perpetrators. The aging of the population has its age-specific individual characteristics, which are a source of misunderstanding of ageism due to the influence of to-ignore prejudices. The company's goal is to find "friendly conditions" for urban living for an aging population.

Key words: aging population, urban planning, crime

**JEL Code:** J 11, J 14, K 14

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# VELKOSTĚ BYTOV V KRAJINÁCH EÚ

## HOUSING SIZE IN EU COUNTRIES

**Janka Zajacova – Beata Stehlikova - Maria Zubkova**

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### **Abstract**

The aim of the contribution is to examine the size of housing in EU countries depending on the selected factors and to identify states with similar values of the analysed factors and to look for similar periods in terms of the size of housing. In the article, we deal with one of the indicators of the quality of housing, namely the size of the housing. We measure it by the number of rooms per inhabitant. According to the type of data used, it is a quantitative research study. Cluster analysis is used to create groups of states with similar values of the analysed factors. We also used it to identify similar stages in terms of housing size in the EU between 2005 and 2022. The results of the cluster analysis of the number of rooms per inhabitant and selected factors show two clusters. While post-socialist countries predominate in the first cluster and old EU countries in the second. The added value of the paper is the exact proof that EU housing policies have had an impact on the size of housing.

**Key words:** housing size, EU, cluster analysis, housing policies

**JEL Code:** R20, D10, I24

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# UNVEILING NORMATIVE INCOME ASPIRATIONS: AN EXPERIMENTAL APPROACH

Tomáš Želinský

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## Abstract

This study focuses on normative income aspirations and introduces a novel experimental approach to elicit these aspirations. To overcome the limitations of typical survey questions, we ask participants to think about a hypothetical self who is similar to them in terms of some important characteristics, such as, gender, age, education, and income. We design three treatments, which vary how income aspirations are elicited. In one treatment, we ask a simple question about the hypothetical self, in another, a non-incentivised question requiring a coordinated response (guessing the average response), and in the third, an incentivised question which also requires a coordinated response. The experiment was conducted among 2,067 adults in the Slovak Republic, 800 in the United Kingdom, and 799 in the United States. The results suggest that responses in the hypothetical-self treatment are significantly higher on average than responses to the other two treatments requiring coordination. The second and third treatment are only marginally different, suggesting that the a non-incentivised, but coordinated measure may still be useful to measure aspirations. The findings are consistent across the three national contexts, indicating the generalizability of the results in our sample.

**Key words:** Income aspirations; social norms; online experiment

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