



ABSTRACTS

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Table of contents

Session 1: AI Across Contexts: Human, Ethical, and Technological Impacts.....	3
Session 2: Dimensions of Sustainability in Society and Economy.....	8
Session 3: Educational Innovations and Pedagogical Strategies I.	14
Session 4: Educational Innovations and Pedagogical Strategies II.....	19
Session 5: Labor Market Dynamics and Workforce Development	23
Session 6: Cultural and Communicational Transformations and Social Dynamics	29
Session 7: Technological Advancements in Education.....	35
Session 8: Innovation, Entrepreneurship, and Digitalization	41
Session 9: Higher Education - Local and Global Dynamics.....	46
Session 10: Reshaping Work and Security in the Age of Digital Transformation	53
Session 11: Generations, Ageing, and Social Change.....	59
Session 12: Identity, Power, and the Challenges of Coexistence in the 21st Century	64
Session 13: Business Strategies and Economic Development.....	69
Session 14: Regional Development and Local Communities.....	75



Session 1: AI Across Contexts: Human, Ethical, and Technological Impacts

Gergő Vida – Regina Balogh – Kálmán Sántha – Márta Trembulják – Petra Szabóné Pongrácz	The role of automated diagnostics in the identification of learning disabilities
Based on our previous research, we have demonstrated the efficacy of abduction in learning disability assessment (Sántha et. al., 2024). This contributed to the construction of a Bayesian network, which was derived from the expert opinions of 586 children with learning disabilities in the 2019/20 academic year. The database was compiled from the text of expert opinions collected from the archives of a county expert committee, using stratified sampling. Our research utilised Bayes' theorem of full probability to explore the likelihood that a variable might indicate a learning disability. This was represented as a network using proprietary software, developed in Python 3.12. Our research question examined whether a set of conditions could be identified in children's test texts that could potentially predict a subsequent diagnosis of learning disability. Our hypothesis posits that a decision-theoretic process can be characterised to facilitate the creation of a model. The learning disability diagnostic event sequence by abduction enables the modelling of a decision-theoretic pathway by adapting a Bayesian network. This allows for estimating whether a given child belongs to a risk group or not, even prior to the assessment being conducted, as numerous variables can be described through classroom-related activities and pedagogical characterisation, without explicit pedagogical competence. This suggests the necessity of automating certain stages of the assessment process to optimise resource utilisation. Bayesian networks can potentially be developed into neural networks that are capable of autonomous learning and decision-making. The diagnostic capabilities of neural networks can be enhanced by applying deep learning techniques.	
János Farkas	The Nexus of AI and LSP Instruction
In the digital era of globalization, language teaching has witnessed a paradigm shift worldwide, owing to the appearance of artificial intelligence technologies. The effectiveness of Artificial Intelligence (AI) tools in language learning is unquestionable, and their integration into language teaching methodologies is inevitable. This presentation reveals the benefits of AI implementation in language for specific purposes (LSP) university courses. We believe that all LSP instructors should emphasize AI's pivotal role as a catalyst for innovative language teaching and take a critical and ethical look at AI to better prepare students for	



the future. This is partly the purpose of this presentation. We present how AI technologies can be utilised to improve language learning, teaching methodologies, and personalised learning. We also hint at how AI technologies support Vygotsky's scaffolding theory. Our presentation highlights the importance of multimodal skill development and adaptive learning and emphasizes autonomous learning. The wide range of AI technologies and the emergence of virtual and augmented reality tools unquestionably develop language competencies in authentic communicative situations. In business language teaching, where students need to be prepared for the diverse communication and promotional challenges and expectations of the labour market, multimodal skills are now emerging as a fifth skill to be developed, alongside speaking, reading, writing and listening skills. The questionnaire survey results with LSP teachers show they proactively support integrating these platforms in LSP courses. The topic of the presentation is relevant because it provides insights into innovative language teaching AI technologies, which boosts the didactic effectiveness of LSP courses.

**Henda Zayane – Boglárka
Balassa Eisinger**

**The violation of private data and its impact
on consumers in the age of Artificial
Intelligence**

Artificial intelligence (AI) is rapidly changing the way e-commerce platforms collect and use consumer data, making it easier to offer personalized recommendations and improve shopping experiences. However, this growing reliance on AI also raises serious concerns about data privacy, misuse, and the ethical treatment of consumers. This study aims to explore how AI is misused in e-commerce, focusing on the exploitation of consumer data, its implications for consumers, and the ethical issues that arise. A systematic literature review was conducted using the PRISMA framework, covering peer-reviewed articles published between 2019 and 2025. The review identified several key risks, including invasive user profiling, unauthorized data sharing, AI-deduced disclosure, and manipulative personalization. It also revealed a clear gap between what consumers think is happening with their data and how it is actually being used. Concepts like psychological uncertainty and the privacy paradox show that many users remain unsure and uneasy about AI-driven systems. This paper adds to the existing research by focusing on the intersection of AI, e-commerce, and consumer data exploitation, a space that remains underexplored. It also highlights the shared responsibility of businesses, regulators, and users in creating a fair and transparent data environment. The findings call for better data practices, stronger regulation, and ethical AI design to rebuild consumer trust and ensure responsible use of AI in digital commerce.



Salam Allawi Hussein – Sándor R. Répás	Enhancing Network Security with AI-Driven Intrusion Detection Systems
In an era where cyber threats are becoming increasingly sophisticated, ensuring robust network security has become a critical priority. This study focuses on enhancing intrusion detection systems (IDS) by utilizing machine learning techniques to classify and detect malicious activities in network traffic. We aim to build a scalable and efficient AI-driven intrusion detection framework using a harmonized dataset from four widely recognized intrusion detection datasets: CIC-IDS2017, CIC-DoS2017, CSE-CIC-IDS2018, and CIC-DDoS2019. The dataset has been curated for consistency, ensuring a cleaner foundation for analysis. By leveraging machine learning models, we explore various classification techniques to detect a range of network intrusions, including DoS, DDoS, and other anomalous behaviours. Our results demonstrate the effectiveness of AI-driven approaches, with the top-performing models achieving high accuracy: XGBoost (0.99), Random Forest (0.98), and LightGBM (0.98). Feature selection notably improved model performance, especially for LightGBM, which saw an accuracy increase from 0.90 to 0.98. Random Forest (with feature selection) achieved the highest macro F1-score (0.88), indicating a balanced performance across all classes. These findings highlight the potential of integrating AI into network security to address emerging threats and optimize IDS in diverse network environments. Furthermore, the study emphasizes the importance of feature selection, which has proven to be crucial for improving model efficiency, particularly when dealing with complex, imbalanced datasets. The ability to classify different types of attacks with high precision will significantly contribute to developing real-time defense mechanisms. Ultimately, this research paves the way for future advancements in automated, AI-driven network security systems that can adapt to evolving cyber threats with higher accuracy and resilience.	
Karoly Nagy – Edmond Hajrizi	Automating the management of AI technology
Nowadays, there is increasing talk about the dangers of AI technology. According to some (e.g. Elon Mask), the "outbreak" of AI technology can trigger a global catastrophe and jeopardize the existence of mankind. Technology management plays a prominent role in mitigating the associated risks: "Technology management is the collaboration between people and technology to ensure that technology does what people expect it to do". According to the results of our analysis, which is based on the methodology of the transformative research approach, the efficient use of the truly developed technology management advice in the field of AI technology faces at least two very big difficulties. The first is that all four different types of artificial intelligence require a corresponding specific approach. According to Bernard Marr's current classification system, there	



are four primary types of AI: reactive, limited memory, theory of mind and self-aware. The crux of the problem lies in the fact that these four types are not all created equal: Some are far more sophisticated than others. Some of these types of AI are not even scientifically possible at present. The second difficulty has to do with defining the boundaries of automation. For example, machine learning solutions already use measures against overfitting, such as cross-validation and regularization. However, these measures can only complement, but not replace, human responsibility and intervention in management tasks". The aim of our study is to publish some of the principles and aspects we have developed that can be generally applied in the field of automating the management of AI technology.

Judit Glavanits

The Impact of Priming on the Adoption of Robots for Personal Use

In the 21st century, direct interaction with robots in our daily lives seems inevitable, so the extent to which people accept these devices is an important research question. Although a wide range of robotic devices exist, most of the examples presented in the media are only laboratory prototypes, and those that are commercially available still have several limitations when it comes to performing complex tasks. Therefore, in the short to medium term, their application is expected to be limited to simpler socio-emotional tasks (regardless of the complexity of the task), and for more complex services they will still typically need to interact with human teams. The research sought to find out whether priming with positive or negative messages (viewing short, intense videos) affects the level of acceptance of robots in the subjects. The study involved 129 male and female students between 18-27 years during in March 2023. The participants completed the Epistemic Curiosity Questionnaire, the IUS-12 (Uncertainty Intolerance Scale), the STAI-5 state anxiety test, and a self-developed test of robot acceptance after playing short videos used as priming tool. As a result of the experiment, it was found that the subjects were not influenced by the prefix of the message (friendly/positive or threatening/negative) of the content played, but by the representation of the robots in general and the subjective emotion they evoked (discomfort, threat, agitation). The experiment supported the hypothesis that men are more supportive of the use of robots in daily life and personal use than women.

Marcelo Gaspar – Carolina Proenca – Jorge Juliao

Impact of Artificial Intelligence in Higher Education: Adoption, Challenges, and Global Perspectives

The transformative impact of Artificial Intelligence (AI) in higher education is significantly impacting both instructional methods and institutional management. Nevertheless, despite its rapid expansion, research on AI adoption,



its actual impact, and stakeholders' perceptions remain to be further analyzed and discussed. To such an end, this study explores the perspectives of students, faculty, and administrators regarding the use and adoption of AI tools in academia. Using a qualitative approach, 17 dedicated interviews were conducted with a diverse sample from various academic backgrounds to assess AI awareness, use, and future implications. Preliminary findings reveal opportunities and barriers in AI adoption, including knowledge gaps, ethical dilemmas, and the lack of clear guidelines on using AI in academia, leading to a broader discussion on the need for informed discussion on its adoption and integration. By addressing the use of AI in academia, current research contributes to the broader debate on AI's role in higher education, providing relevant insights into its educational and managerial challenges.



Session 2: Dimensions of Sustainability in Society and Economy

Bence Lukács	The impact of sustainability indicators to Idiosyncratic Risk: Evidence from U.S. Firms
This study investigates how varied provider ESG ratings and Scopes 1, 2, and 3 emissions data impact the degree of idiosyncratic and systematic risk impacting on U.S. firms. This meets the increasing need for clarity on how sustainable performance indicators affect financial risk. Utilizing a sample of 182 U.S. firms over one year, this paper adopts the Fama-French three-factor model and regression analysis in order to identify how ESG ratings from Standard and Poor's Global and Refinitiv, together with Scope 1, Scope 2, and Scope 3 emissions, relate to firm-specific and market-wide risks. Results show that higher Refinitiv ESG ratings are significantly linked to lower idiosyncratic risk, while the ratings from S&P Global show a much weaker and statistically insignificant effect. Furthermore, Scope 3 emissions are linked to increased idiosyncratic risk—testifying to the challenge of managing broader environmental impacts through value chains. However, neither the ESG rating nor any of the scopes of emissions alter the systematic risk; hence, the associated sustainability issues dominate the firm-specific risk rather than altering the exposure to wider market-wide factors. Such a comparison of various providers' ESG ratings and different scopes of emissions has not been done before. The study develops a deeper understanding of how sustainability indicators shape risk management strategies, supporting investors and firms in making more informed, sustainability-aligned decisions.	
Imre Tódor	The impact of fashion influencers on the promotion of sustainable fashion
This study explores the critical role of fashion influencers in promoting sustainable fashion within the digital age. Fashion influencers, leveraging platforms like Instagram and YouTube, possess significant potential to shape consumer behavior, societal norms, and aesthetic preferences. Their influence extends beyond fashion trends, addressing environmental and social challenges associated with the fast fashion industry, such as overproduction and waste. By integrating personal narratives and aesthetic values into their content, influencers act as intermediaries, bridging consumer awareness with sustainable practices. The research employs qualitative methods, utilizing semi-structured interviews to examine diverse perspectives on sustainable fashion. Findings highlight influencers' dual role as educators and advocates, offering accessible	



information about eco-friendly products and inspiring lifestyle changes among their audiences. Notably, influencers amplify awareness through innovative digital strategies, including promoting second-hand clothing and sustainable shopping apps, while aligning their messages with relatable personal stories. Participants emphasized the limitations posed by fast fashion's dominance, including its affordability and aggressive marketing strategies. These factors often deter consumers from pursuing sustainable alternatives, which are perceived as less accessible due to higher costs. Nonetheless, influencers play a transformative role, showcasing sustainable fashion as both a stylish and ethical choice. Through authentic storytelling and creative content, they foster shifts in consumer attitudes, encourage long-term sustainable purchasing habits, and challenge the traditional fast fashion paradigm. This study underscores the interconnectedness of fashion, digital media, and sustainability, positioning influencers as key agents in advancing eco-conscious consumer practices and shaping a more sustainable future for the fashion industry.

Antónia Payer – László Buics

**Sustainable Procurement in Interior Design:
Corporate Challenges and Solutions - A
Systematic Literature Review**

Environmental awareness is playing an increasingly significant role in every part of the world, whose key elements are sustainability and recycling process. The aim of this research is to investigate the challenges companies face in terms of sustainability when implementing procurement and supply chain management processes related to interior design. The research was based on four main questions, how procurement and supply chain management are appear in construction processes, and what challenges these processes face that can influence sustainable material use in construction supply chains. The study work was based on a systematic literature review using the SCOPUS database, which contained 480 scientific articles for keyword search. These were filtered using PRISMA screening processes, the PEO framework and content analysis, so the result is 70 relevant articles. The findings indicate that this topic represents a research gap where supply chain management, sustainable construction and urban planning intersect. Companies must confront several challenges related to new technologies and environmental awareness in order to develop or transform well-functioning supply chain management processes.



Tamás Szabó	The Interplay of Fintech, Educative UX, and User Behavior: A study of financial consciousness and its impact in the context of SDGs 4 & 10
	Financial awareness is a variable phenomenon in everyday shopping and spending. It is important to recognize that money management, budgeting and conscious financial planning contribute to a better quality of life and a more resilient and relaxed society. The study will examine the role and prevalence of financial awareness and the effects of fintechs in the context of the #4 and #10 sustainable development goals (SDG). Although this concept is a bit elusive - one can be just as aware of 100 € and 100.000 € as well - it would be ideal if it were discussed more, especially in the field (or during) of education. The paper will further examine the prevalence of financial consciousness and the added educative value by using some new-era digitalization. The paper argues that the higher the proportion of financially aware people/users in each society, the more sustainable the social framework that serves them. Due to that fact, this societal demand from below drives both service providers and manufacturers to produce more efficient and sustainable products; and at the end of the chain, living standards could rise. Financial consciousness can be fostered if the product is ready to easy use. Thus, the trends of the fintech revolution and the simple, user-friendly products nowadays can be at the forefront of raising financial consciousness. The first research hypothesis so that by actively using fintech products, could result in better financial awareness and conscious life. Hence, two sides to this concept can be distinguished. The first is the internal user traits, the spending consciousness and the user patterns. The second - linked to serving and shaping the first - is the development of the products, the presentation of their offers. In this research, the author focuses both on understanding this concept and on the results observed on both sides of it.
Gergely Zoltán Macher – Dalma Bódizs – Dóra Sipos – Dalma Schmeller	Multidimensional Framework for Evaluating Asbestos Poverty Levels: Pathways Towards Sustainable Cities and Communities
	Asbestos was widely utilised across various industries for an extended period, particularly in the construction sector during the 20th century. The popularity of asbestos-containing products stemmed from their fire resistance, thermal insulation properties, and mechanical strength. However, their well-documented adverse health effects led to the prohibition of their use in many countries. This research aims to conduct a comprehensive examination of the often-overlooked social dimensions associated with asbestos, with a specific focus on the affected population's circumstances and the potential solutions accessible to them. Its analysis encompasses legal regulations concerning



asbestos, societal awareness, and the economic implications of asbestos removal from the perspective of those impacted. The findings highlight that the remediation of asbestos-containing products is often contingent on the financial and social conditions of the affected population, posing significant challenges for the economic sector and environmental protection efforts. The results underscore the need for stricter legal frameworks, enhanced public awareness, and expanded financial support to mitigate the health risks associated with asbestos. This research contributes to the development of integrated approaches that address social, economic, and environmental dimensions in tandem. Its originality lies in situating the concepts of social sustainability and socially oriented environmental development within the context of asbestos-related policies. The findings suggest that achieving asbestos-free environments is feasible only through the integration of social dimensions, taking into account the economic and social conditions of the affected communities. The analysis sheds light on how the process of asbestos abatement influences the status of those affected within the systemic interrelations of the environment, economy, and society.

Kinga Hokstok-Nagy

Sustainable strategies for occupational safety

Sustainable occupational safety is an approach that focuses on the long-term preservation of workers' health and safety. This includes minimizing workplace hazards, improving the work environment, and ensuring the well-being of employees in a way that considers economic, environmental, and social factors. Additionally, it can enhance the efficiency of companies and result in economic benefits. The goal of the Sustainable Development Goals is to ensure full and productive employment and decent working conditions for everyone. However, there are many challenges that hinder the achievement of these goals. Global economic inequalities remain a significant obstacle, especially in less developed countries, where achieving sustainable economic growth is more difficult, limiting job creation and the provision of decent working conditions. Furthermore, in many countries, workplace safety and health regulations are inadequate, increasing the risk of workplace accidents and illnesses, and posing a serious challenge to creating and maintaining a safe work environment. Technological changes, such as automation and digitalization, are also transforming the labor market, requiring new skills and training. Retraining the workforce and adapting to technological changes is a challenge for both employees and employers. To address these challenges, integrated approaches are needed that consider economic, social, and technological factors alike. To achieve the goals of the Sustainable Development Goals, coordinated efforts by governments, companies, and civil organizations are necessary, including the development and enforcement of appropriate regulations, continuous review of workplace safety standards, and the involvement of employees.



Péter Molnár – Bence Lukács – Árpád Tóth	Content Analysis for the Social Pillar of ESG Reporting: A Social Reporting GRI Standard Compliance Review
	The evolution of sustainability reporting has led to an increased emphasis on environmental disclosures, often at the expense of social and governance dimensions, as mentioned by Molnár et al (2024). While frameworks such as the International Sustainability Standards Board's (ISSB) IFRS S2 standard offer important advances in climate-related transparency, they insufficiently address the broader social aspects of corporate sustainability performance. In response to this gap, this study investigates the interoperability of social disclosures across three major frameworks: ISSB S2, the European Sustainability Reporting Standards (ESRS), and the Global Reporting Initiative (GRI) standards. Using a structured interoperability index, we systematically map and score the degree of thematic and structural alignment between these standards, focusing specifically on social disclosure topics. The analysis reveals moderate interoperability between ESRS and GRI social disclosures, but far lower alignment between ISSB S2 and either ESRS or GRI, confirming the ongoing underrepresentation of the social pillar within the ISSB framework. Connectivity ratios remain below 6% across all matrices, underscoring persistent fragmentation in global ESG reporting standards. These findings highlight the need for regulatory bodies and standard setters to advance harmonization efforts that equally prioritize environmental, social, and governance dimensions. By foregrounding the interoperability gaps in social disclosures, this study contributes to the academic debate on ESG convergence and informs policy discussions on developing multidimensional, stakeholder-responsive reporting architectures.
András Nagy – Péter Bertalan	Goeconomic Analysis of the Belt and Road Initiative - Opportunity or Threat to National Sovereignty?
	The study analyses the complex toolset of expressing economic and political influence and negotiating power in global, regional and local dimensions through the analysis of the Belt and Road Initiative (BRI) as a goeconomic and geopolitical concept, taking into consideration the greater picture of geopolitical processes and changes on global level, specifically the U.S - China relations. The BRI project aims to expand China's economic and political power on a global scale, primarily at the expense of the United States' sphere of influence. The communication strategy of the BRI programmes and China focuses on mutually beneficial cooperation, but the primary winner of the deals is China. We argue that the participation and involvement of countries with greater economic exposure in the project serves China's interests much more than the interests of



the given country. China's goal is to establish an economic dependency relationship or strengthen the existing dependency without attempting to change the political system. The effects of the BRI on national sovereignty are presented through the development of the economic and political relations between Hungary and China, focusing on the past 9 years. Hungary, as a member of the EU, was the first to join the project, which was in line with the country's policy of opening up to the East and globally. The study examines the economic and geopolitical consequences, advantages and disadvantages of joining the BRI initiative from the perspective of national sovereignty.



Session 3: Educational Innovations and Pedagogical Strategies I.

Anita Tóth-Bakos	Flipped Classroom Trends: A Survey of College Faculty
As an innovative active learning method flipped learning provides students with several opportunities. Today's students, who are digital natives, have to be equipped with relevant competencies to respond to the demands of the modern world. For this reason innovations in teaching-learning processes and instructional environments, which are essential to meet the needs of these learners, have brought active-learning pedagogy to the forefront of education. The implementation of a flipped learning approach can take advantage of the increased occasions for constructivist teaching and learning that technology provides (Koohddang et al. 2009). Flipped learning has many potential benefits including more one-on-one interaction time between teacher and students, active learning and cooperation, and self-paced learning. It also provides students with flexibility in the event that they miss some lectures. In addition flipped learning can be considered complimentary to the traditional classroom setting because it encourages classroom time to be arranged more toward active and collaborative learning (Roach 2014). The aim of this study and research is to explore attitudes towards the use of flipped classrooms among university lecturers. The questionnaire survey focuses on university lecturers in Slovakia, mainly lecturers in psychology and education. The aim of the questionnaire is to find out the extent to which the FC method is known and used, the experiences of the lecturers in using it, the advantages and disadvantages, and the reasons for not using it. The results of the research will provide a picture of how and in what ways the awareness and use of the method can be increased and promoted.	
Gergő Vida – Enikő Pásztor – Ágnes Fehér – Julianna Mrázik	Changing views of preschool teacher students on the boundaries of practical training: possibilities for adapting the TSES questionnaire
This study investigated the attitudes and beliefs of third-year BA students in kindergarten education before and after an eight-week internship in the spring semester of 2024/2025. Owing to disparities in domestic practices from European systems, a previously standardised questionnaire could not be utilised, thus limiting the generalisability of the results. The preschool teacher students completed two questionnaires. One is the Teachers' Sense of Efficacy Scale (TSES), a well-established instrument used in	



English-speaking countries. It was translated into English and adapted for kindergarten teachers, and consequently no longer remained a standardised test. Given the absence of an adequate standardised instrument, the researcher elected to modify an existing questionnaire or extend it to the observed practice. Standardisation must be considered. The other instrument comprises six open-ended questions, which are analysed using a qualitative strategy based on grounded theory to explore changes in views, as they can also be used to examine fragments of text (Zank, 2022).

The TSES may be relevant for assessing teachers' self-efficacy beliefs, including those of kindergarten teachers. Self-efficacy can be crucial for preschool teachers to influence their teaching-learning strategies. Teachers with strong self-efficacy beliefs are more innovative and successful in creating a positive teaching-learning environment (Şen, 2021), which is potentially applicable to the preschool practices studied. This may relate to commitment to the teaching profession, which is relevant for kindergarten teachers, as confidence in abilities may increase retention (Hao, 2024).

Self-efficacy beliefs may influence children's attitudes towards education and learning, particularly during the kindergarten-to-school transition (Çakır, 2020). The original TSES was developed by Tschannen-Moran and Hoy (2001). In our study, we modified and translated the scale into Hungarian (Nie et. al., 2012).

**Anett Balogh-Pécsi – Anikó
Benyák – Viktória
Kövecses-Gősi**

**Examining and developing emotional
intelligence and wellbeing of teacher
candidates through storytelling and drama
methods**

The level of development of emotional intelligence plays a defining role in the emotional wellbeing of teacher candidates and later teachers, and an increasingly important role in the effectiveness of teaching. Teachers, who have high level of emotional intelligence, are able to control their emotions, are well balanced, content and happy have key qualities for effective teaching and learning (Réthyné, 2016; Wang, 2022). Thus, in addition to methodological training, it is of utmost importance to pay more and more attention to the examination and development of the non-cognitive areas of professional personality, wellbeing and, within this, emotional intelligence. Our research aims to examine and develop emotional intelligence and wellbeing, and to compare pre- and post-test data for teacher candidates. Our research examines the profile of emotional intelligence in first-year and four-year students, their strengths and weaknesses, and the relationship between the demographic factors studied and emotional intelligence and resilience. The areas of emotional intelligence were measured using the Bar-On Questionnaire (1997, 2006). To assess resilience, we used the Hungarian version of the Resilience Questionnaire (Járai et al., 2015; Connor and Davidson, 2003). In our research, we search for perspectives on the



application of drama methods and storytelling pedagogy that effectively support the development of the researched areas. The presentation will first describe the theoretical background of the research, the measurement tools used, and then present the partial results so far and the main methods of the planned development. The use of storytelling and drama methods are effective according to a number of studies in the development of emotional intelligence and enhance wellbeing.

Ágnes Hornyák

Analysis of the collaborative network in relation to the needs of the labor market: in focus the renewed teacher training

The timeliness of this research is given by the fact that the number of unfilled positions in our country's teaching society is significant. The counterbalance to all of this may be realized in the increase in the number of young people choosing teacher training. Some movement can be experienced in this area in Hungary, but the popularity of the teaching career among young people choosing the career is still low. The teaching career increasingly requires complex knowledge and skills from employees. Taking into account the needs of the labor market is unavoidable, which emphasizes the strengthening of the collaborative culture of teachers, which is already highlighted by the teacher qualification system. Based on the professional capital theory of Hargreaves-Fullan (2012), emphasis should be placed on the relevance of professional capital in teacher education. The examination of teachers' life paths in the dimensions of human and social capital accumulation (Hornyák-Pusztai, 2023) shows that higher education extracurricular commitments, diverse professional network have a motivating force in terms of teachers' performance. My research conducted with students in higher education and teacher training, using focus group interviews conducted in the spring of 2024, showed that the relationship capital present in secondary school and higher education (teacher training), the future plans and individual life events, and parental background patterns are of paramount importance for choosing a teaching career. The gap-filling significance of this work is that no surveys have been conducted in our country to learn about the professional relationship capital of students in higher education. A pilot questionnaire was prepared to examine this, the dimensions, indicators, and the questions and variables that form the basis of the analyses will be presented at the conference.



Nor Amalina Rusli	Educational Reform and the Development of Digital Literacy Skills in Students with Autism Spectrum Disorder (ASD): Teacher Strategies and Challenges
This study aims to explore the role of educational reform in enhancing digital literacy skills among students with Autism Spectrum Disorder (ASD), focusing on teacher strategies and the challenges faced during implementation. With the increasing importance of digital literacy in modern education, students with ASD often face unique barriers in acquiring these skills. As digital technologies become a critical part of both academic and social life, it is crucial to understand how educational reforms can support these students. This research fills a significant gap in literature by examining the intersection of ASD, digital literacy, and the evolving educational landscape. The methodology involves semi-structured interviews with 13 teachers who work with students with ASD in various educational settings. These interviews provide qualitative insights into the strategies teachers employ to develop digital literacy skills in these students, as well as the challenges they face. The findings reveal that teachers utilise individualised approaches, including visual aids, task breakdowns, and technology-assisted learning tools, to enhance digital literacy. However, challenges such as lack of resources, insufficient training, and the need for a more tailored curriculum persist. Despite these hurdles, teachers report positive impacts on students' engagement and learning outcomes when digital literacy is integrated thoughtfully. In conclusion, while educational reforms show promise in improving digital literacy for students with ASD, there is a pressing need for targeted professional development, adequate resources, and a more inclusive curriculum to address existing barriers and maximise the potential of these students. The study emphasises the importance of continued support and innovation in teaching strategies for this diverse group.	
L. Patrik Baka – Gyöngyi Csenger – Orsolya Dörnyé Zábrádi – Anikó Kurucz	Artificial Intelligence, Writing, Collaboration: Lessons from a Workshop
The following report summarises the results of a creative writing workshop held at the Children's University of Győr on 27 June 2024. The workshop, which focused on artificial intelligence, text creation and collaboration, provided valuable insights that are discussed in this report. The level of text creation competence was investigated on the basis of group work, comparing stories and narratives created by mixed groups (children aged 7-12) using randomly selected call words with texts generated by artificial intelligence (ChatGPT) using the same call words. The research focused on two key areas: firstly, the analysis of text creation in a collaborative environment, and secondly, a comprehensive	



examination of the complexity of the content and form of the texts (internal cohesion, consistency, linguistic accuracy and creativity) in comparison with the AI.

Gyöngyi Csenger	An investigation into the career aspirations of first-year trainee teachers at Széchenyi István University
The current situation of the teaching profession, the lack of professional and social respect for teachers, the need for salary increases, the need to reduce teachers' burdens, and performance evaluation are among the particularly interesting issues of today. Achieving quality education necessitates the presence of innovative, creative, humane and professionally committed teachers who are committed to the development of a pedagogical culture, to renewal and to continuous improvement. The career orientation and choice of young people preparing for a career in teaching can be influenced by a number of factors, including their experiences of teaching and learning, their perceptions of their own abilities and vocational aptitude, family patterns and labour market opportunities. The present research aims to explore the image of the teaching profession held by first-year student teachers. This will be achieved using a case study approach and a metaphor method including sentence completion to examine the students' perception of the "teacher image". The analysis of the students' metaphors was used to identify the prevalence of teacher-centredness or learner-centredness, knowledge transfer or knowledge acquisition, cognition or emotion. The students' essays, in the form of an analysis of their written work on the question "Why do I want to be a lower primary teacher?", were analysed to identify career motivational factors, positive attributes that enhance career motivation, and future aspirations. The most significant finding of the research is that all of the first-year students interviewed envisage a career in the teaching profession.	



Session 4: Educational Innovations and Pedagogical Strategies II.

Mihály Fónai – Orsolya Nyilas	Is recurrent education a Compulsion?
The purpose of this presentation is to test our hypothesis formulated in recent years. We posited that adults perceive participation in adult education as a compulsion, primarily due to the prospects of post-training employability (Fónai & Nyilas 2025). In the 1970s-1990s, adult learning was significantly influenced by theoretical concepts related to recurrent education within the framework of lifelong learning (Németh 2003). The concept itself signifies the following: everyone has the right to education beyond the age of compulsory schooling (Jarvis & Wilson), alternating with other activities such as work or leisure. Proponents of recurrent education argued that people have the right to return to education throughout their lives. Over the past decades, the concept and notion of recurrent education have generally been characterized by positive interpretations (Hasan 1996, Tuijnman 1996, Sutton 1996). However, some researchers suggest that if, for instance, the labour market utility of the training is low, this may contribute to participants experiencing repeated trainings as external pressure, often as a compulsion (Ábrám 2015a, 2015b, Hajdú & Koncz, 2021). Between 2012 and 2019, we examined a state-recognized Pharmacy Assistant training program. Participants received various types of support and income replacement allowances during the training. Across the four courses studied, 186 individuals completed the training, and we conducted questionnaire surveys and focus group interviews among them. Based on our research findings, we accept the critical interpretation of recurrent education and assert that participants perceive the “return” to training programs as a compulsion. This perception can be mitigated by factors such as the level and quality of information provided and acquired about the course, the professional standards of the training, the labour market position of the qualification, and the social relationships formed during the course and their quality.	
Tibor Szabó – Zuzana Lehocká Nagyová – Szilvia Petzné Tóth	Development of numerical understanding at preschool age
The child gets to know numbers from an early age. He/she uses and meets them in everyday life. In the development of numerical understanding an important role is also played by the kindergarten, where the main task of the teacher is to draw the child's attention to the mathematical aspects of phenomena. She should help the child to discover and recognise connections, relationships, similarities as well as differences. While organising mathematical activities the child's basic activity is the game. During the process of playing, on the basis of	



his/her own experiences the child creates new skills, attitudes and ways of thinking. According to Skemp at the end of the preschool age the child should recognise numbers even on the basis of the dots on a cube. He/she needs to know what means to be fourth in line, so the child needs to interpret numbers. He/she also needs to use some mathematical concepts: small - big, many - few, short - long, narrow - wide, empty - full, less - more, same, all, none, etc. This does not mean that the child understands the concept of numbers, but that he/she can point it out on his/her hand and count it one by one. Our research involved children at the end of their last year at kindergarten, immediately before entering the first year of the primary school. During our research we were investigating how prepared for school mathematics children were. In other words: what is the level of their numerical understanding at a certain age.

Balázs Varga – Dominika Kokas

The positive impact of judo sport on the lives of children living with disabilities

The equality of opportunity of people living with disabilities is an outstandingly important issue, not only from an ethical point of view, but also from a practical aspect. Fostering inclusive instruction and education, as well as creating developing programmes require such solutions that really support the development of those living with disabilities. Sports, especially judo can be an efficient means in this field. In our study, we are looking for the answer how judo favours the physical, spiritual and social progress of children living with disabilities. More specifically, to what extent they improve children's physical abilities, such as movement coordination and balance, in addition, what influence they have on improving and forming self-confidence and self-assessment, besides, on social relationships (particularly on communication and team spirit) and the quality of life. Throughout the empiric research, we are applying three main data collecting methods. On the one hand, we are exploring the opinions of judo children struggling with learning and behaviour difficulties (SNI (acronym for special educational needs), BTMN (acronym for difficulties with integration, learning and attitude), autism spectrum disorder, etc.) and also of their parents and coaches, with questionnaires, about the changes caused by judo. On the other hand, from interviews recorded with the coaches, we are creating a picture of their impressions and challenges gained at the training, while, from talks made with the parents, we are putting their experiences in connection with their children's development under a microscope. Third, applying the technology of observation, through viewing several training sessions of several judo clubs, we are analysing the class activity, progress and group dynamics of children living with disabilities. Our objective is to formulate practical suggestions for the coaches and the children's parents, based on our research results.



Gyöngyi Fábián	Critical thinking and the learning environment
The recent dramatic changes in the traditionally natural learning environment of man have triggered the need of the transformation of methods, techniques and attitudes to teaching and learning in and outside the classroom. Under the impact of the rapid technological development, international organizations and education institutions tend to emphasize the necessity of acquiring new skills of human survival, including critical thinking. As a result, intense research has been carried out to pin down the core meaning, and to identify the essential elements of critical thinking, however, there is still a lot more professional work required to have a full understanding of the concept and its operation in the authentic situations of learning. To this end, the paper intends to introduce a novel approach to the complex componential structure of critical thinking concept, expanding on the main components of some individual, social, contextual and cultural aspects of the model. To demonstrate the operation of critical thinking in authentic situations, to highlight some challenges the individual has to face, and the limitations of practicing the strategy, the paper presents examples of human learning behavior instances based on empirical experience.	
Anita Tóth-Bakos	Inclusive opportunities in music education
The aim of the study is to present methods and techniques that provide inclusive education in the context of music education. In relation to this main objective, it provides an introduction to the concept of inclusion and a summary of the inclusive possibilities of music education. The main aim of the study is to present methods of music education and music therapy whose main principle and elements are to make music learning, music education and development through music available to all. A common and key element of the concepts presented is that, in addition to the educational objectives, they also highlight the therapeutic, developmental and positive effects of music. In addition to summarizing the concepts, the paper focuses on their evaluation from an inclusive perspective, highlighting their personality-shaping and skill-developing effects.	
Ildikó Lőrincz- Helen Sherwin- Viktória Kövecses-Gősi – Szilvia Fitus – Krisztina Németh- Máté Babos – Dóra Horváth	Educating the educators: An impact study of CPD at SZE
Improving the quality of higher education (HE) is a global priority as universities strive to equip graduates with skills necessary for today's dynamic world (European Commission, 2016). Skills include learning (e.g. critical thinking), literacy (e.g. digital competencies) and life skills such as leadership (Martin, 2017).	



Well-trained educators are key to fostering these skills and can develop them by adopting active learning approaches that deepen student understanding (Gibbs and Coffey, 2004). Educator training is thus vital.

In 2022 Széchenyi István University (SZE), launched a four-year Continuing Professional Development (CPD) programme to upskill its academic staff. With a traditional teaching culture in Hungarian HE (Eurydice, 2022), the CPD helps teachers adopt active learning practices to better prepare students for today's world.

This presentation explores the impact of the CPD. Drawing on survey data (97 teachers) and focus group interviews with 20 teachers from various disciplines, the study addresses the question: what impact has CPD had on teaching practices thus far? Initial findings indicate some impact (e.g. use of learner-centred methods), but significant improvements in teacher effectiveness have yet to be achieved. We conclude by suggesting future steps for the CPD.



Session 5: Labor Market Dynamics and Workforce Development

Dóra Lakosy	Examining Organisational Commitment in SMEs: Preliminary Insights of a Hungarian Research
Research on organisational commitment began in the second half of the 20th century, but the topic is still relevant today, based on the market trend for organisations to retain employees and reduce turnover, which poses serious challenges to employers in a rapidly changing world. Engagement plays an important role in workplace productivity. Highly engaged employees tend to be more productive and more willing to stay in the workplace in the long run. As a result, engaged employees contribute to the success of their employer and create stable jobs for themselves and their environment. The present paper investigates organisational commitment in the SME sector in Győr, Hungary, and it presents the preliminary results of an ongoing PhD research. The stakeholders of the quantitative research to be presented in this paper are employees of the SME sector in Győr. Research on organisational commitment in SMEs (small and medium-size enterprises) can be a niche area in the field of organisational commitment, as so far research has been conducted either in a specific area or within a specific organisation. On the other hand, the choice of topic is justified by the fact that the SME sector plays a significant role in the Hungarian economy.	
Judit Glavanits – Kitti Hengl – Anikó Benyák	Psychological capital, workplace stress and mobbing in the context of workers' mental health
Stress has become an increasingly dominant issue globally since the second half of the 20th century, moving from clinical contexts into public awareness. It is now recognized as a significant health risk factor, particularly in work environments. While positive forms of stress (eustress) can enhance performance, chronic workplace stress is linked to serious mental and physical health problems. This study investigates the relationship between psychological capital (PsyCap), workplace stress, and mobbing among employees in Germany, Austria, and Hungary. Based on a cross-sectional survey (N = 89), the research applied validated instruments (PCQ, PSS-10, COPSOQ II) to measure PsyCap, perceived workplace stress, and experiences of mobbing. Results show a high average PsyCap level and a moderate perceived workplace stress level across the sample. A strong negative correlation was identified between psychological capital and workplace stress ($r = -0.573$, $p < .001$), while a moderate positive	



correlation was found between workplace stress and mobbing experience ($r = 0.323$, $p = 0.002$). Furthermore, Kruskal-Wallis tests indicated significant differences in perceived stress across low, medium, and high PsyCap groups, with high PsyCap individuals reporting substantially lower stress levels. Cross-country comparisons revealed a higher prevalence of mobbing in Hungary than in Germany and Austria. Although psychological capital moderated stress levels, it did not significantly moderate the relationship between mobbing and perceived stress. These findings emphasize the role of PsyCap in reducing workplace stress and underline the necessity of organizational interventions to promote psychological resilience and mobbing prevention.

Nikolett Huba-Varga – Attila Pongrácz – Iván Zádori	The Impact of the Cement Industry on the Labor Market in Baranya County in the Context of the Just Transition Fund
As a newly established instrument within the Cohesion Policy framework, the Just Transition Fund (JTF) was launched for the 2021–2027 programming period. Its principal aim is to facilitate the European Union’s transition to climate neutrality by 2050. This study focuses on Baranya County, designated as an eligible region primarily due to the presence of the cement industry. The research investigates the economic and labor market impacts on stakeholders within the cement sector within the context of supplementary mining royalties and CO₂ tax regulations. The analysis is based on a survey administered to affected production units. The findings indicate that, as a consequence of the regulatory measures, cement and lime industry enterprises in Baranya County have sustained substantial financial losses in recent years. In response to these pressures, it is projected that, by 2025, companies will be compelled to optimize production processes, resulting in a decrease in the volume of domestically manufactured cement and lime products. This anticipated decline is likely to lead to potential layoffs and the relocation of skilled labor to other countries, with qualified engineers being particularly affected. Hungary may face a significant brain drain of highly skilled engineers. The contraction in domestic production capacities would necessitate increased reliance on imports from foreign manufacturers, thereby escalating construction costs—a trend that is already observable. Furthermore, domestic manufacturers, burdened by the additional financial obligations imposed by these levies, are struggling to sustain their competitiveness even within the local market. Temporary closures of cement and lime production facilities are expected to trigger cascading effects, compelling suppliers and subcontractors to reduce their workforces and suspend operations, thereby exerting a profound negative impact on the local SME sector in Baranya County.	



Adrienn Bartha	Labour Market 4.0: challenges and solutions for incentive management in the digital age
The term Fourth Industrial Revolution is used to describe the current, latest phase of technological and industrial development, referring to the era of digital technology diffusion and integration. This process has also meant that not only has our pace of life accelerated through more efficient use of resources, but our communication and consumption patterns have also changed. Change is also affecting the world of work. Modern workplaces are increasingly made up of multi-generational teams of different ages and experience. These diverse groups bring many benefits, but most companies are faced with the challenge of coordinating the work of employees who have radically different views and perceptions of work, not only in terms of age, but also in terms of values, interests and even perceptions of work itself. This enhances the role of generational management in motivation and incentive management at work. In the era of Labour Market 4.0, identifying employee needs and expectations, and collaborating and aligning different generations is essential for competitive and sustainable operations, organisational effectiveness and employee engagement. The aim of this study is to identify the motivational needs of different generations and thus provide alternatives for the development of effective incentive strategies that contribute to organisational success in the era of Labour Market 4.0.	
Jázmin Lőre	Challenges and opportunities of female leaders in the labor market
In the global work culture of the 21st century, the image of female leaders is rather marginal. The stereotypical opinion links terms 'leader' and/or 'manager' to the male gender and predetermined gendered characteristics typical to men. The aim of this study is to redefine certain perspectives through an empirical research based on elaborating previous literature regarding gender stereotypes in leadership and challenges facing female leaders. This paper looks at the main issues that concern female leaders throughout their careers and even after reaching a higher position, and discusses the differences between male and female workers on the top levels of the organizational hierarchy. The research was conducted in the Western Transdanubian region of Hungary. The findings of the study prove that gender gaps in the corporate world can be attributed to the presence of stereotypes resulting from gender roles embedded in patriarchal societies and gender-based discrimination in the labor market. As the results show, these non-quantifiable problems are of great importance in terms of the position of women in the labor market and society.	



Patrícia Horváth – Petra Kecskés – Attila Pongrácz	Economic and Social Dimensions of Labour: Exploring Western Transdanubia
The study of regional labour market structures is crucial in today's rapidly changing economic and social environment, since the labour force is both an important actor and a link between these areas. There is a mutual interdependence between local social and economic systems and human resources: while the labour force is shaped by economic and social conditions, these systems are equally dependent on it. The labour market functions as a complex, multidimensional phenomenon embedded in local systems. This research focuses on the investigation of the local labour market structure in the Western Transdanubian region of Hungary. The aim of the paper is to highlight strengths, weaknesses and opportunities for improvement of the region's labour market efficiency and sustainability. The study emphasizes external factors – economic and social determinants – and analyses the social embedding of labour market and the most important economic indicators. These provide insights into the current and future state of the labour market. Using aggregated indicators and regional data, a macroeconomic analysis is carried out based on the Key Indicators of Labour-Market (ILO) and the labour force survey methodology of the Hungarian Central Statistical Office. The study presupposes that the local labour market and its environment form a mutual system of interdependencies that can be quantified based on economic and social indicators. While sustainability has been a significant focus in the literature, the sustainability of labour markets has received less attention. This research aims to identify indicators relevant to sustainable labour market studies and contribute to promoting labour market sustainability in the region through an interdisciplinary approach. The results will provide practical relevance for regional policies, economic development plans and employment strategies.	
Nóra Hegyi-Halmos	Labor Market Expectations for Graduates: A Content Analysis of Hungarian Job Advertisements
The labor market is undergoing continuous evolution, particularly influencing graduates who must align their competencies with the demands of a dynamic workforce. This study investigates the transferable competencies currently expected of graduates in the Hungarian labor market, focusing on skills deemed essential across multiple job roles and industries. To address this aim, over 500 online job advertisements were systematically analyzed using a content analysis methodology. The analysis prioritized competencies frequently required across various sectors, reflecting employers' expectations. Key findings indicate that the most critical competencies include communication skills, problem-solving abilities, teamwork, and digital literacy.	



Additionally, transferable skills such as project management, adaptability, and autonomous work were prominently featured.

The results underscore that, in 2024, the competencies most valued by employers are those that can be broadly applied across diverse roles and are essential for successful adaptation to the rapidly changing work environment.

These findings directly align with the thematic focus of the conference, offering practical insights for enhancing graduate preparedness. They underscore the importance of educational institutions and career advisors in equipping students with these key competencies. Furthermore, the study emphasizes the pivotal role of teachers and career counselors in bridging the gap between academic preparation and labor market expectations.

This research contributes to strengthening collaboration between educational institutions and employers, integrating scientific insights with practical applications to facilitate the successful labor market integration of graduates.

Melinda Németh	The effects of industrial revolutions on the labour market -The future challenges for HR departments
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The industrial revolutions have continually transformed people's lives. These changes are felt not only in daily life but also in the labour market. Political actors, educational institutions, international organisations, employees, and employers must consistently monitor these changes and prioritise them in their decisions. This study reviews definitions of the industrial revolution in the literature, describing various approaches. A brief overview of each industrial revolution follows, focusing on the uncertainties and diverse interpretations that emerge during the identification and presentation of subsequent revolutions after the third industrial revolution. After analysing the industrial revolutions, the study highlights the Fourth and Fifth Industrial Revolutions, emphasising the emergence of labour market opportunities, dilemmas, and consequences. The research aims to establish a theoretical framework that not only presents historical perspectives but also prepares for empirical research by processing the literature sources. The study concludes that it is essential to consider many factors during technological transformation, particularly labour market trends, cost calculations, and collaborations, and that current HRM practices require transformation. Future empirical research based on this study will investigate the impact of labour market changes related to industrial revolutions from the viewpoint of companies' HR departments.

Jānis Klieiders	4 day working week - is it new reality?
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For several years different countries have been discussing shortening working hours for 4 working days or shorter working weeks, including in Latvia, active



discussions and gathering of votes of residents for implementation of such regulation are taking place. This is related to increasing the balance of private and work life, while at the same time the employee has to perform work duties more efficiently and efficiently.

The Article will therefore look at the experiences of several countries and their legal framework.



Session 6: Cultural and Communicational Transformations and Social Dynamics

Zsuzsanna Kara – Márta Szombathelyi Konczos – Tamás Gergely Kucsera	Culture-Based Urban Development and Sustainability: Experiences from Hungary's European Capitals of Culture and Implications for Győr
Objective – This study explores the intersection of culture-based urban development and sustainability through the lens of urban ecology, drawing on the European Capital of Culture (ECoC) programs in Veszprém-Balaton 2023 and Pécs 2010. It examines how ecological principles can be embedded in cultural strategies to strengthen regional identity and promote long-term urban resilience. Methodology – Using an interdisciplinary framework, the research integrates literature review, data analysis, and case study methods to assess the sustainability impacts of ECoC programmes. Key focus areas include brownfield regeneration, low-emission transport, and community-based cultural practices, with emphasis on the ecological roles culture can play in transforming urban environments. Results – The findings show that ECoC programmes can serve as catalysts for both cultural renewal and sustainable urban development. In the case of Veszprém-Balaton 2023, former industrial zones were creatively reused for cultural purposes, supported by initiatives promoting green mobility and circular resource use. Infrastructure projects—such as cultural spaces developed with sustainability criteria—and measures like reusable cup systems and eco-conscious transport solutions contributed to reduced environmental footprints and enhanced public participation. Originality/Value – This research repositions culture as a strategic resource in urban sustainability agendas. By synthesizing lessons from ECoC programmes, it introduces a model for integrating cultural programming with ecological planning, offering scalable approaches for sustainable cultural investment. Future Research – Future work may investigate Győr's evolving cultural strategy through an ecological lens, assess long-term outcomes of ECoC projects, and examine cross-regional interconnections in cultural-ecological networks. Keywords – Urban ecology, culture-based development, European Capital of Culture, sustainability, regional identity	



Fanni Kaszás – Chovanová Supeková Phd. – Keklak PhD, Richard	Fake news in tourism: a systematic literature review
	In recent years, the number of fake news stories has significantly increased in the world of media, especially with the widespread use of social media. It has impacted several industries, including tourism. From a tourism point of view, the spread of fake news can contribute to the reduction of the popularity of a destination. It may influence travel decisions by discouraging tourists from visiting certain places and thus damage the reputation of the destination, contributing to economic loss. After a literature review on the communication aspect of fake news and a general introduction of fake news in the tourism industry, we conducted a systematic literature review (SLR), a research methodology to collect, identify, and analyse available research studies. The current SLR is based on the Scopus, Web of Science and Google Scholar database of existing literature on the topic of fake news in the tourism and hospitality industry. The study identifies, lists, and examines existing papers and conference proceedings from a vast array of disciplines, including tourism, hospitality, psychology, behavioural studies, computation, and tourism management, in order to give a well-rounded view on the issue of fake news in the travel industry. After selecting 54 previous studies from more than 20 thousand results for the key words 'fake news' and 'tourism,' we have analysed 39 papers in total. The SLR aimed to highlight existing gaps in literature and areas that may require further exploration in future, primary research. We have found that there is relatively limited academic literature available on the subject of fake news affecting tourism destinations, compared to studies focused on hospitality services. Thus, further exploring fake news in the tourism sector is essential, as it heavily relies on accurate and reliable information to shape consumer behaviour, expectations, and experiences.
Flóra Keszei	Obstacles of Intercultural Communication in Hungarian SMEs: Effects of the Ukrainian Workforce During the Russian-Ukrainian War
	The Russian-Ukrainian war affected the labour markets of the European Union, particularly in Hungary, which witnessed an increase in the number of Ukrainian workers. The purpose of the study is to identify the approaches that Hungarian small and medium-sized enterprises (SMEs) have used effectively when incorporating Ukrainian workers. The paper aims to identify the internal intercultural communication processes that occur during the integration process and how SMEs can offer a good basis for a harmonious and effective multicultural work environment based on the results and recommendations.



The research uses a qualitative approach, which includes focus group interviews. The participants were selected from among the employees of Laba Magyarország Oktatási Kft., a company with Ukrainian origin that has been affected by the war. The paper will investigate problems such as language issues, misunderstandings, and cultural stereotypes that are likely to arise during the integration process within an organization.

It will uncover typical problems of SMEs (e.g., language, prejudice, and culture) in addressing the changing labour market during the war and provide recommendations for solving them during the transition period. The results are expected to enhance the competitiveness of the SMEs in the global market through the management of intercultural communication within the organization.

Zsuzsanna Pálffy

**A Novel Approach to the
Operationalization of Corporate Local
Embeddedness: Narratives as Indicators
of Embeddedness**

Corporate embeddedness, the extent to which companies anchor themselves in a local context through political, economic, academic, social, and environmental connections, remains a key area of research in social and regional sciences. Due to the limited availability of secondary data on corporate relationships, measurement methods often rely on qualitative data. However, one commonly neglected source of secondary data is corporate communication, particularly CEO letters in annual reports, which has gained importance in meeting stakeholder expectations and offering insights into corporate strategies and activities. While CEO letters have gained increasing academic interest, embeddedness narratives and their cultural determinants remain underexplored. This research proposes a novel method for measuring corporate local embeddedness by analysing the cultural differences in embeddedness narratives within CEO letters from the cosmetics and fashion industries. The focus on these sectors is justified by the significant variations in embeddedness orientations across industries and the accessibility of relevant data. The key research questions include whether the embeddedness narratives within CEO letters can serve as complementary data for the operationalization of corporate embeddedness and how cultural factors differentiate local and global orientations of corporate embeddedness. The research methodology combines qualitative and quantitative techniques, building on software-based content analysis to identify key themes and keywords related to corporate embeddedness, followed by deeper qualitative exploration. Highlighting CEO letters as primary data, this research encourages companies to address societal and environmental issues beyond profitability, enhancing transparency and trust.



David Sulistiawan Aditya – Judit Herczeg

Does ICT really enhance higher education? A critical understanding of ICT integration in higher education

“Does ICT really enhance education?” has been a big question for more than three decades since ICT was viewed as a potential tool for education in the 1980s. A lot of research has been conducted to portray and explain the impacts of these evolving technologies' integration into higher education worldwide. Some presented success or positive impacts of the integration but some indicated challenges, negative impacts, and even failures. Despite getting involved in the contention of whether ICT should be used or not be used, this paper presents a critical understanding of the issue by providing a nuanced perspective from the existing works of literature. In particular, this paper considers how education researchers should divert their lenses to the sociological aspects of the phenomenon. Discussing it on the frame of globalization, social capital, and network society theory, this paper deduces that ICT integration in higher education is a complex and multifaceted process and is influenced by interdependent factors. The existing studies on the issue were mostly biased and focused mainly on the micro level of integration. This paper also emphasizes that ICT integration is not individual rather it is a social phenomenon in which the systemic levels influence one another. Understanding the context and characteristics of students and teachers is pivotal to providing an effective framework for the integration process. Finally, future research as the implications of the present theoretical review is discussed in this paper.

Júlia Hajszán – Júlia Szőke

Cultural Differences and the Application of Diplomatic Protocol in the Central and Eastern European Region

The success of diplomatic relations is closely tied to the understanding of cultural differences and the proper application of protocol. In the countries of the Central and Eastern European region, the diverse historical background, as well as social and cultural characteristics, shape both formal and informal communication. The aim of this study is to explore how cultural differences influence the application of diplomatic protocols in the region. The study presents and analyzes the strategic tools that facilitate effective diplomatic dialogue. The analysis focuses on national traditions, differences in etiquette, and the norms applied in political and business diplomacy. In conclusion, the research seeks to answer the question of how the lack of cultural sensitivity, along with the application of the appropriate protocol, affects the development of diplomatic relations between countries. The findings indicate that a lack of cultural sensitivity may lead to diplomatic conflicts, while the proper application of protocol can contribute to strengthening relations between countries.



Karoly Nagy – Edmond Hajrizi, Luna Shamieh– Ferenc Gemesi	Globalization in transition - from the information society to the humanitarian society
One of the focal points of our conference is the topic „Effects of globalization on society and the economy”. In our study, we approach this topic from a different perspective. As the last in a long chain of publications, we now summarize the results of our research, which show the mechanisms of impact of economic and social changes triggered by technological developments on globalization. Our research, which began in the early 1990s, initially aimed to examine the fundamental nature of globalization in the context of the “information age” envisaged by Manuel Castels. We then came to the conclusion that globalization is a fundamentally positive phenomenon and basically a process that has dangerous implications for the emergence of a global information society, which is nothing other than humanity’s response to the loss of function of modern nation states. The main feature of this response is the rapid development of the achievements of privacy and the independent problem-solving ability of human communities based on the achievements of information technology development. We later found that the process of globalization, as interpreted above, was halted by the largely inadequate security measures brought about by September 11, 2001. The renewal could have been Society 5.0, also known as the Super Smart Society program introduced by the Japanese government in 2016. But unfortunately, this program has not gained much recognition internationally, mainly because its true essence was not understood. Meanwhile, the process of globalization has undergone serious distortions. A sort of Gresham’s Law seems to be at work in almost every branches. Technological development has always had a decisive influence on the development of global power relations. We now outline what social and economic impact we believe the development of AI technology will have and how this will force globalization to create a new historical formation, the so-called humanitarian age.	
Júlia Szőke	Assessing Cultural Sensitivity among Higher Education Students in Multicultural Environments
In an increasingly globalized world, cultural sensitivity is a crucial competency for higher education students studying in multicultural environments. The research aims to explore the level of cultural sensitivity among university students engaged in international academic settings in a Hungarian university. The study employs a quantitative research, utilizing a questionnaire survey to measure students’ attitudes, awareness, and adaptability in diverse cultural interactions. The sample consists of students from various national backgrounds enrolled in multicultural programs in the field of social sciences. Data analysis,	



conducted through statistical methods, identifies key factors influencing cultural sensitivity, such as previous intercultural experiences, language proficiency, and academic exposure to diversity-related topics. The findings indicate a significant correlation between international exposure and higher levels of cultural sensitivity, highlighting the importance of structured intercultural learning opportunities. The study provides empirical evidence on the development of cultural sensitivity in higher education and emphasizes that institutions can enhance students' intercultural competence this way.



Session 7: Technological Advancements in Education

Inez Koller	Seriousgames – a Toolkit for digital community education
Video games, including online video games, are part of a "new communicative order" characterised by the written, oral and audiovisual modalities of human communication (Snyder, 2001; Nyíri, 2004) and encompassed in a single electronic system. Video games tell the kind of stories that students would encounter in literature, history or ethics classes, but through much more engaging techniques and digestible units. So why use these methods and technical tools just for entertainment when they are equally suitable for conveying and shaping social and community values? In my presentation, first I will present the theoretical basis for the analysis of video games from the point of view of their identity-forming, community-forming and civilising effects as part of culture, on the one hand, and the way in which they affect personal development, the knowledge and skills they develop or re-develop, which are decisive on the path to adulthood and which are decisive in the development of a new type of participatory democracy, on the other. Then an interactive educational platform – the seriousgames.hu – will be presented, including a social awareness game inspired by the world of popular video games. The objectives and mechanics of the game will be analysed. Test results will bring us closer to understand in what ways education – institutional or community-based – can keep up with consumerism in keeping the attention of the youth and frame how they get to know the world and act in it.	
Dalma Lilla Dominek – Nóra Barnucz	The use of multimedia in the development of practical skills
The presentation will present the theoretical background of complex innovative teaching methods based on the communicative constructivist pedagogical approach. Key elements are modern methods of mapping the competences to be developed and the use of interactive methods and multimedia. The use of interactive and multimedia tools ensures the effective development of these competences and motivates learners. Modern ICT tools play an important role in the development of the specific competences identified. One of the objectives of this presentation is to review the theoretical background of multimedia and to present pedagogical models that justify the need for a methodological paradigm shift in both public and higher education. Finally, the presentation will draw attention to the usefulness and systematisation of digital solutions for the specific purpose of developing different competences in the context of experiential pedagogy.	



Balint Lampert	Understanding the Operation of a Circular Economy with LEGO Robots
The LEGO Experience Pedagogy Room, established in 2019 at the Apáczai Csere János Faculty of Pedagogy, Humanities, and Social Sciences at Széchenyi István University, regularly hosts training sessions related to STEAM education and LEGO robotics clubs. Additionally, the opportunities provided by the LEGO methodology are continuously applied in the training of students majoring in teaching, special education, and social pedagogy (personality development, methodological support). In 2022, a new project was launched in which LEGO tools were applied in the field of sustainability education. The program was named "RESZETT" and is owned by Büchl Hungaria Kft. The RESZETT program is a modular educational package with a specific focus on waste management, built on LEGO tools and educational science methods. The program consists of four sessions, unified by a framework story. During the sessions, students get acquainted with the theoretical foundations of circular economy, waste prevention, the practice of separate waste collection, and the topic of recycling, according to their age group. The cooperation agreement with Büchl Hungaria Kft. also includes the creation of an adequate measurement and evaluation system to measure effectiveness. Parallel to the pilot sessions, the process of developing effectiveness measurement, as well as the development and testing of effectiveness measurement tools began. The processing of the results of the first measurements is ongoing. This study reports on the processed results.	
András Benedek – János Cz. Horváth	A new challenge in adult education - or modern-day "Memex" in the shadow of AI
Is the renewal of culture today truly happening through the initiation of the next generation? From the perspective of adult education, a unique aspect is that since culture exists in the consciousness of individuals, involving a new generation in the care of cultural treasures requires a cognitive harmony and value community between the transmitters and the receivers. Bush described the plans for a thought-supporting machine called Memex in his work "As We May Think" (Bush, 1945). Machine parts that track human thought organized in a network structure are now available. According to the original intent, personalized encyclopedias and additional knowledge repositories could be created from knowledge elements linked based on human considerations. Is it reasonable that the younger generation values knowledge elements and memes shaped by the market demands of IT companies rather than the knowledge preserved by their society over generations? Does this support a society's renewal processes and even maintain its identity? We are witnessing a unique process with the mass spread of AI applications (Nyiri; Benedek, 2024).	



Between 2016 and 2021, the Open Content Development (OCD) Research Group of the Hungarian Academy of Sciences and the Budapest University of Technology and Economics took a proactive approach to the challenges posed by AI in education. They developed methodological recommendations and created a content-construction procedure. Micro-contents created by teachers or students can form an information block that provides a learning experience. In individual learning forms characteristic of adults, the construction of micro-contents can be an alternative to the repetitive acquisition of knowledge (Benedek & Horváth, 2016). In our presentation, we would like to showcase examples of micro-content unit chains that illustrate the practical possibilities of 'memex' knowledge development.

Gábor Kallós – Norber Boros	Using digital twins in STEM (STEAM) education
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In this study, our goal is to demonstrate that digital twins, which have been highly successful in industrial applications, can also be effectively used in education. Given their popularity and widespread use, we have chosen LEGO robots as the foundational model. These robots are highly favoured among children and young students, providing an excellent platform for learning STEAM (Science, Technology, Engineering, Arts, and Mathematics) disciplines. Furthermore, LEGO's proprietary 4C methodology enhances both teaching and learning processes, making it a suitable framework for educational digital twins. Like other digital twins, LEGO-based digital twins require modelling and programming. To implement this, we have chosen the Gazebo simulation environment and the Python programming language. Our approach demonstrates how integrating digital twin concepts with LEGO robotics can foster an effective learning experience in STEAM education.

Beata Kese-Bohacsi	Artificial intelligence in secondary education: Can we teach the next generation?
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Artificial intelligence is almost everywhere. Education is no different. But can we use it in secondary education? Does it really have the potential to teach the next generation? In my opinion, it is important that young people learn the correct and appropriate use of AI applications. That they know what to use and how to use it. After all, it is not just a tool for talking; it can be used to develop skills, for personalised learning/teaching, and, moreover, for critical thinking. There are many potentials in these tools for teachers to facilitate their daily preparations or even to reduce the time spent on revision. In my research, I received responses to the questions of the respondents that are a good starting point for teachers in secondary schools in Győr. The key points where there are major differences of opinion are presented, as well as those where there is agreement in the



answers. However, in general, it can be said that, fortunately, many open-minded teachers work in Győr and see both sides of the "gun" of the AI. Everybody knows that AIEd tools are the future of teaching – the amount of them is one of the main questions and the procedure of integrating them into the Hungarian Education System. This is not only our issue to solve, however, European Union, United Kingdom and the United States have many good examples not only in secondary education but also in primary and academic level, too. We need to follow these new waves and use the new features if we do not want to be left behind other countries.

Meyly Kheng	Transforming teacher education in the digital age: Innovations, challenges, and global perspectives
Teacher training programs must adapt to technological advancements, evolving pedagogical methodologies, and the demands of a globalized society. Through the lens of digital transformation, social inclusion, and international collaboration, this study examines key themes in teacher education. This research explores the role of ICT in teacher training, the effectiveness of methodology courses, the integration of digital tools, and the development of professional teacher identities. To explore these themes, this research draws data from qualitative interviews with teacher educators and supervisors. The criticality of technological transformation and innovation in teacher education is underscored in the study. Interview responses highlight the necessity to equip teacher trainees with digital literacy skills. The study explores further the strategies to overcome technological challenges, aligning assessments with digital methodologies, and fostering a culture of digital resilience among trainees. Furthermore, this study discusses digital governance within teacher training, ethical policy development, and the intersection of social inclusion. The findings illustrate how educators prepare trainees for labor market demands in a technologically driven age, encourage reflective teaching practices, and navigate generational diversity. The research also sheds light on the implementation of sustainable teaching strategies in response to climate-conscious educational reforms, the need for customized educational materials, and the evolving role of coursebooks. In conclusion, this paper advocates for a comprehensive and interdisciplinary approach to enhance teacher education to meet the demands of the modern world by integrating emerging technologies, fostering professional identity development, and addressing inclusivity.	



Judit Grotte – Balázs Mahler	Sustainable Hybrid Project Management: A New Professional Profile in Tourism
The "Sustainable Tourism Innovation through Hybrid Project Management" (HyPro4ST) project, supported by the European Union's Erasmus+ program, aims to create a new, relevant job profile: the "Sustainability and Hybrid Project Manager." This role is designed to support the development of sustainable tourism. Over the course of three years, 17 partners from six European countries are collaborating to provide a multilingual training program and an innovative Virtual Learning Environment (VLE) to support professionals in the tourism sector. The VLE platform developed within the project offers a flexible learning environment, allowing for self-paced progress, participation in professional forums, and engagement in interactive learning activities. The platform focuses on developing project management skills with a sustainable, green, digital, creative, and entrepreneurial mindset. The Virtual Open Online Course (VOOC) is particularly beneficial for current and future professionals in the tourism sector, covering key topics such as: - Sustainability and Project Management - PMO and Design Thinking - Creativity and Innovation - Digital and Entrepreneurial Skills - Agility, Adaptability, and Resilience The HyPro4ST initiative aims to address workforce challenges in the tourism sector by increasing the number of trained sustainability professionals and project managers, thereby promoting the long-term sustainability of the industry. In addition to fostering education and professional development, the project also contributes to reducing socio-economic inequalities and enhancing innovation in tourism. Keywords: sustainable tourism, hybrid project management, online professional training, Virtual Learning Environment, Erasmus+ program, tourism innovation	
Anikó Makkos – Boglárka Boldizsár – Szabolcs Rákosi – Zoltán Csizmadia	The Impact of the Science Center Student Lab Project on Subject Attitudes in STEM Subjects
The research examines the impact of the project 'Development of Science Experiential Education Programs and Science Experiential Centres', implemented by the Mobilis Science Center in Győr between 2017 and 2021. The professional and societal relevance of the program and research lies in the growing importance of STEM disciplines and careers worldwide in recent decades ensuring a long-term supply of skilled workers. A vital tool for this is the development of curricula that meet the needs of the 21st century and the	



innovation of teaching methods in science subjects. The research involves a review of the literature on experiential science teaching and subject attitudes, the role of science centers, and relevant project documents. The present research involving 592 students, focused on attitudes toward technology and science, openness to STEM careers, and the experiences and memories of those who participated in the Student Lab Theme Days. The results of the statistical data analyses confirm the effectiveness of the experiential education methods used in the Theme Days sessions, as the students' openness to STEM careers is higher for those who participated in the sessions compared to the non-participants. There are significant differences in the attitudes of girls and boys toward science subjects in the program. The results suggest that the success in stimulating interest in science was mainly due to the experiential nature of the sessions. Moreover, the research found that the project led to the strengthening of the participants' personal and social skills. This study is the first to look at the impact of the project. The results shed light on how teaching STEM subjects using experiential pedagogical methods can contribute to the long-term effectiveness of Széchenyi István University's enrolment efforts and lead to the economic success of companies in a region facing a significant labor shortage in STEM careers.



Session 8: Innovation, Entrepreneurship, and Digitalization

Eva Löwe	Bridging Loyalty and Innovation: The Dual Challenge for Germany's Automotive Workforce
The study examines the relationship between employee loyalty and innovation within the framework of an empirical study conducted at a large German automotive company. The rapid technological development of the industry, sustainability goals, new market entrants, digitalization, and the rise of electric mobility demand continuous adaptation from both companies and employees. The research aims to explore how the automotive transformation and the associated innovation pressure affect employee loyalty and to identify key factors that promote loyalty. The research is based on a survey conducted among employees working in the company's development department. The analysis focuses on factors such as organizational culture, job security, brand significance, training opportunities, work-life balance, and job satisfaction. The findings aim to demonstrate that maintaining loyalty amidst the constant progress driven by innovation is a cornerstone of the company's long-term success. The research provides practical recommendations for human resource management on how to balance strengthening loyalty and fostering innovation.	
Najwa Jnaikah – Diana Bujdoso	Transforming Recruitment: The Role of E-Marketing in a Post-COVID World
The COVID-19 pandemic has profoundly reshaped business practices, particularly in marketing and recruitment. This study aims to explore the integration of e-marketing strategies into recruitment processes in the post-pandemic era, emphasizing their significance and impact. The research objectives include identifying key trends, innovations, and challenges associated with digital marketing's role in human resource management, providing a rationale for understanding its transformative potential. Methodologically, the study employs a bibliometric approach, analysing 1,391 publications using tools such as Bibliometrix, VOSviewer, and CitNetExplorer. These tools facilitate a systematic examination of research trends, intellectual advancements, and conceptual frameworks. The dataset was curated from the Web of Science database, focusing on publications from 2020 to 2024, ensuring relevance to post-pandemic dynamics. The findings highlight the critical role of technologies like artificial intelligence, machine learning, and big data analytics in optimizing recruitment and enhancing marketing efficiency. Social media platforms, including LinkedIn, Facebook, and Instagram, have proven invaluable for real-time communication	



and brand engagement. However, challenges such as data privacy concerns and algorithmic biases underscore the need for ethical practices. Furthermore, the study's cluster analysis reveals significant themes, including post-pandemic recovery in recruitment, digital transformation in marketing, and the psychosocial impact of social media.

This research contributes to the broader discourse on digital transformation, emphasizing the strategic alignment of technological innovation and ethical considerations. It provides a comprehensive framework for understanding how e-marketing can enhance recruitment efficiency, foster organizational competitiveness, and address emerging challenges in a digitally driven landscape.

Ibrahim Alsakhen	A Generic Balanced Scorecard-Based Method to Evaluate the Effect of ERP Implementation in a Mid-size Company in KSA
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The evaluation of the effects and impacts of implementing an Enterprise Resource Planning (ERP) system is very difficult because this system affects all aspects of the organization, and some of these aspects may be hard to quantify. There is no single agreed-upon analytical structure for analyzing the organizational benefits and effects of ERP systems. Nonetheless, several academics have proposed that the balanced scorecard technique could be a useful tool for reviewing ERP system performance and effects on the company. In this study, we decided to follow this method because it assesses the effects of the ERP system not only on the informational infrastructure of the organization but also on all aspects of the organization, including financial, business processes, customer service, and innovative learning perspectives. We studied a mid-sized medical company in Saudi Arabia using real data that were collected before and after the implementation.

The results of the study were surprising and indicated a complete failure of the system implementation.

Md Abdullah Al Mamun – Laszlo Buics	Data Management Practices in Manufacturing across Industries: A Systematic Literature Review
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In today's manufacturing environment, a lot of data is being generated from different sources such as machines, human input, and supporting platforms. Proper management of such data can ensure optimized productivity, better product quality, and reduced operational downtime which in turn helps the human worker to finish the jobs with a higher efficiency. While many organizations are using the latest technologies such as IoT, AI, blockchain, and



cloud computing to enable more efficient data collection, processing, and analysis for greater benefits, they are still facing certain challenges including data silos, interoperability issues, and cybersecurity concerns. The aim of this study is to check the current manufacturing data management arrangements along with the details in different settings across various industries. To do so, a systematic literature review was conducted using the available literature from Web of Science and Scopus using the Prisma method along with the help of the PEO framework in a constructive manner. It is seen that there are industries that use the traditional approach of operational data management and analysis, also another set of industries utilize the most modern methods of manufacturing data handling and processing and finally, there are a few other industries that use the combination of both traditional and modern approaches. Moreover, this paper is also doing a comparison among all these to figure out the similarities, process details, and potential deficiencies. As stated earlier, data generated in the manufacturing processes are of boundless value in the context of any industry as this can bring great economic benefits and empower the humans working alongside machines much better than before hence, this study will help to identify any sort of gap among the current practices of data collection, handling, and processing across the industries.

Barbara Berendi – Szabolcs Rákosi

Artificial Intelligence in Recruitment: A Critical Analysis of Its Advantages, Limitations, and Ethical Implications

The application of Artificial Intelligence (AI) is increasingly transforming traditional recruitment and selection processes by offering time and cost efficiency while enhancing objectivity. This study aims to provide a comprehensive exploration of AI's role in this domain, with a special focus on its advantages, limitations, and ethical and legal implications. Particular attention is given to how AI can be utilized in blue-collar recruitment and how new technologies are adopted by small and medium- sized enterprises (SMEs).

The research is based on a combination of primary and secondary methods. The recruitment and selection processes of the digital age, as well as the development of AI and its application in business practice, are examined in the literature review. Empirical data were collected through a questionnaire survey investigating the experiences and attitudes of 52 recruitment professionals towards MI. Data analysis was carried out using statistical methods to reveal the challenges and expectations of recruiters.

The results indicate that while AI-based solutions can improve recruitment efficiency and speed, their implementation shows significant differences between large companies and SMEs. The paper concludes that recruitment professionals often lack awareness of AI-related data management regulations, which poses a substantial barrier to ethical and lawful application. Furthermore,



it has been proven that AI does not always present an advantage, particularly in high-volume blue-collar recruitment, where human factors remain critical. The originality of this research lies in its comprehensive insight into Hungarian recruitment professionals' attitudes toward AI and its practical recommendations for the successful and ethical integration of this technology. Based on the findings, it is emphasized that educational and informational support is crucial for adopting AI, particularly considering the unique characteristics of SMEs and blue-collar segments.

Mohammed B. Alshawki

Data Integrity Challenges and Strategies to Secure Industrial IoT Systems

The Industrial Internet of Things (IIoT) has revolutionized the manufacturing industry by enabling enhanced connectivity and communication between physical devices and automation systems. However, with the increasing use of IIoT devices, security concerns have also increased. Since the decisions are made based on the received data in the IIoT systems, ensuring the consumed data is safe and trustworthy is a crucial requirement. GDPR regulation ensures that personal data in the systems is handled securely and not misused, preventing various types of cyber attacks. The regulation requires data encryption, access control, and secure processing to ensure data integrity and confidentiality. Therefore, the systems that are compliance with GDPR boosts trust among different entities in the system. This paper discusses the challenges to safeguard the industrial IoT systems and proposes the adoption of a two layer system for data protection and validation. The first layer of data protection provides a privacy preserving GDPR compliance verification mechanism that utilizes Blockchain technology to enforce the GDPR compliance in IIoT systems while preserving the privacy of the involved entities. The second layer includes the distributed data validation mechanism that creates the trust in the generated data before its consumption, which leads in a safe, GDPR compliance and secure IIoT system. The result of our implementation showed that the proposed system provides safe and traceable model of the IIoT-generated data.

**Tania Akter – Fakhhrul
Mohammad Islam**

Navigating Digital Leadership: Addressing Key Future Challenges

Digitalisation in workplaces, driven by technological advancements, has led to a paradigm shift, new business models, and behaviours, necessitating leaders with digital skills for sustained performance. Research on digital leadership has garnered attention from academics and practitioners worldwide, with numerous research undertaken on the topic. Scholars have been trying to understand this multifaceted phenomenon. However, this paper mitigates this gap by summarising and outlining a framework to amplify “future challenges”



that affect digital strategy. This study aims to review the challenges of digital leadership and highlight the future challenges for leaders through a systematic analysis. The term 'digital leadership' encompasses various types, such as e-leadership, e-leadership, Technology leadership, and leadership 4.0, which are used interchangeably. Articles from Scopus and the Web of Science were reviewed for this study. The study further synthesizes studies between 2019 and 2024, leveraging 32 articles for a structured literature review. The results reveal a myriad of challenges and opportunities in the realm of digital leadership. Analysis of articles from Scopus and Web Of Science highlights key future trends and their implications for leaders navigating the digital landscape. The conceptual framework presented in this study can be a valuable tool for digital leaders, assisting them in making wise choices as they go through digital change.

Szilvia Petzné Tóth – Zsolt Nagy

Digital skills as the key to the future labor market

The importance of digital education has increased dramatically in recent years, especially in the light of changes in the labour market. The European Union aims for 80% of the population to have basic digital skills by 2030, but students' digital competencies are often insufficient. Digital education prepares students for the challenges posed by technological advancements and labor market changes. In Hungary, unemployment exceeds 4%, particularly among young people. Closer alignment between the education system and the labor market is essential for reducing unemployment. According to a study conducted among students in the teacher training program at Széchenyi István University, the majority of students do not possess adequate digital competencies. Higher education institutions and employers play a key role in developing these skills. Developing digital competencies is crucial for students' personal and professional development, as well as for their successful integration into the labor market. Statistical data indicate an inverse relationship between the level of education and the unemployment rate: educated young people are more likely to find employment. One way to reduce unemployment is to raise the educational level of the workforce. Among recent graduates, the lack or improper application of digital competencies is also measurable. Future employees are expected to possess skills that enable them to adapt effectively to the dynamic changes in the labor market. The results of the research show that students' problem-solving and digital competences are inadequate, which hinders their adaptability. Developing digital competences and adapting the training system to labour market needs is therefore a priority to improve the employability of young people.



Session 9: Higher Education - Local and Global Dynamics

Attila Miklós – Eszter Lukács	The University as a Hub of Attraction: Examining the Influence of Localization and Family on University Choice Decisions in Hungary
This study seeks to examine the attractiveness of higher education institutions as community spaces for students and the significance of the services they provide. It aims to explore students' perspectives on planning their long-term futures, particularly in assessing whether the university environment serves as a stronger influence than their place of origin or family background. The research is based on the assumption that students may experience uncertainty regarding their institutional choices and the relative influence of localization and familial ties, especially during their higher education years. The role of the university becomes particularly significant when it is located outside the student's municipality of origin. A student's decision to attend a particular institution is not necessarily determined by the specific bachelor program or the university's prestige but often by other factors. The study combines a review of national and international literature with an empirical investigation, utilizing a questionnaire survey to analyze students' decision-making processes. Many students perceive the university as a transitional "island," offering a temporary space to inhabit before embarking on their future careers. The degree obtained serves as a "passport" to professional opportunities, while the university experience provides a unique community environment and represents a significant step toward independence and separation from familial influence. These findings hold particular relevance for universities, which are continually redefining their roles in response to changing student expectations. Many students view the university not merely as a site of learning but as a precursor to adulthood and a foundational space for personal growth. This study addresses a gap in the existing literature by focusing on the appeal of universities as local hubs and comparing their influence to the retaining power of family ties, offering insights for student development.	
Andrea Csapó-Horváth – Anikó Makkos	The study of the linguistic landscape of a Hungarian university that is going international
The study of the linguistic landscape is a key area for mapping the linguistic and cultural characteristics of different regions and places, including university campuses as well. The phenomenon of internationalization, a pervasive trend among institutions of higher education on a global scale, has garnered significant attention, particularly concerning the language policies and practices	



of these institutions. This attention is manifest in the language choice employed in the signage on campus, which serves as a physical indicator of these institutions' linguistic policies and practices. The following paper will present a multi-faculty study conducted at Széchenyi István University in Hungary. The objective of the research is to address the question of how internationalization is explicitly manifested in the institution, given that the languages of the signages on campus have both functional and symbolic significance. A further aim of the investigation was to find out to what extent foreign languages, especially English and German, are represented in the texts found inside and outside the university walls, and what functions these texts perform. Therefore a quantitative study was conducted in the university's central academic buildings and their immediate surroundings, and the collected material was systematically categorized. This research yielded a comprehensive understanding of the university's linguistic landscape and revealed the lack of a coherent foreign language policy at the university, most noticeably in indoor spaces, where bilingualism or multilingualism does not seem to be a requirement. The results can provide relevant information for consciously (re)designing the linguistic landscape of the university studied and can help other universities plan their language policies.

Hesti Miranda

Indonesian students' association membership and its impact on social integration and engagement in Hungarian higher education

Indonesian students who study in Hungarian higher education strongly felt the difference in the culture. Saunders (2007, pp. 65–67), in contrast to the culture of Hungary, the culture of Indonesia was unique. The network of these ties, hierarchies, and responsibilities makes up Indonesian society, which is more conformist than that of European nations. These attitudes influence social conduct in both public and private spheres. Following tradition helps to preserve the social cohesiveness that Indonesians value so highly. Specifically, social integration is the key for students who decide to pursue their education in higher education. Social integration was found to be a significant predictor of students' perseverance by Pascarella (1986). Hence, the researcher focuses on how membership in Indonesian student associations impacts social integration and engagement among Indonesian students in Hungarian higher education, in what ways Indonesian student associations facilitate social integration in higher education, and how effective students perceive that association in addressing their social needs in higher education. This study is going to collect the data with a semi-structured interview; the language of the interview will be English and social media ethnography. The participants will be around seven students who will be interviewed. The data from the interview will be analyzed



by Atlas. Ti and social media ethnography will be used for classification according to their themes. This study expected results that Indonesian student associations play an important role in helping new students to adapt to Hungarian higher education; events and gatherings contribute to cultural integration for Indonesians engaged in the international communities and finding the important key factor to adjust to Hungarian culture that is facilitated by Indonesian student associations.

**Szabolcs Kiss – Eszter Sós –
Katalin Déé-Kovács – Zsolt
Kovács – Éva Happ**

**Experiences of the introduction of project-
based education at Széchenyi István
University**

Project-based learning aims to enable students to acquire the knowledge and develop the skills needed to solve a project through active participation, solving real problems within a curricular framework. The project experience gained supports their successful preparation for the labour market. Implementing project-based learning in higher education curricula and, thus, adapting the teaching methodology is challenging. This publication aims to share experiences and results of implementing project-based learning. Project-based learning was introduced as a test within experimental foundation courses at the Széchenyi István University in 12 basic programs in the autumn semester of 2024/2025. During the test period, teachers and students were surveyed on positive experiences, challenges, and suggestions for improvement. This research applied both qualitative and quantitative methods. The lecturers were interviewed in-depth during the teaching period, and at the end of the semester, they shared their experiences in a Lessons Learned workshop in a guided group discussion. The research methodology was based on mid-semester interviews with Lecturers and a Lessons Learned workshop. During the mid-semester interviews, the trainers reported on the challenges related to the course redesign, the team organisation used and the selection of project tasks. During the workshop, the results of the test semester were summarized, and their experiences were shared with the other Pilot course teachers. Students' experiences were collected based on a questionnaire survey completed by 199 students involved in project-based learning during the test period. The results obtained after analysing the data showed that this method is particularly effective in developing competencies adapted to the needs of the labour market, as learners acquire knowledge through authentic experiences.



Volodymyr Artamonov – Klára Kovács	Exploring the Role of Sports Clubs in Student Integration at European Universities: Results of a Pilot Study
This pilot study explores the role of university sports clubs in fostering students' social and academic integration within the context of European higher education. Grounded in Tinto's revised integration model and Pusztai's concept of institutional embeddedness, the study addresses two research questions: (1) to what extent participation in university sports clubs is associated with peer (intragenerational) and faculty (intergenerational) relationships, and (2) what individual and environmental factors influence students' club membership. The analysis is based on a survey of 60 competitively active student-athletes who participated in the 2024 European University Games. Participants represented nine countries, with a majority enrolled in Ukrainian universities and engaged in football and other team sports. The study applied ANOVA and chi-square tests to examine associations between university sports club membership and selected variables. Although differences in peer and faculty relationship indices were not statistically significant, a trend toward stronger peer interaction among university sports club members was observed. In contrast, club membership was significantly associated with participation in team sports, team-oriented motivation, and institutional support. These findings highlight that university sports clubs attract team-oriented students, particularly when supported by institutional resources, and may contribute to their social integration. As a pilot study, this research provides an initial basis for further empirical investigation into the conditions under which sports-based extracurricular participation relates to integration outcomes in higher education. Keywords: University Sports Clubs, Student Social Networks, Higher Education Integration.	
Ildikó Némethová – Eva Stradiotova – Lívía Ablonczy-Mihályka – Petra Kecskés	Assessing leadership skills among university business students: a competency-based analysis of emerging leadership skills
The leadership skills of university business students have become a central issue in leadership training, especially in the face of the changing and increasingly complex demands of the global business environment. As industries and organisations continue to face challenges such as technological advances, cultural changes and economic uncertainties, the need for effective leaders with well-defined competencies has never been more pressing. This study examines the leadership readiness of university business students and assesses their self-reported leadership competencies using a comprehensive survey based on the Korn Ferry leadership competency framework. By assessing a range of leadership attributes, the study provides valuable insights into the current level	



of leadership readiness of students preparing for the workforce. The results present empirical evidence that underscores the key factors that influence the ability of students to effectively assume leadership roles. It also highlights areas where students may need further development to meet the changing demands of leadership positions. These insights are critical for universities and educational institutions looking to transform their curricula to better prepare the next generation of leaders for the current and future challenges of the global marketplace.

Peter Solti – Márta Szombathelyi Konczosné – István András

Reforming the organisational structure of Hungarian universities to recognise the role of regional and health functions

The objective of this study is to analyze the internal governance processes and organizational structures of Hungarian higher education institutions, with a particular focus on the University of Debrecen, the University of Pécs, and the University of Szeged. The organizational frameworks of these universities are currently optimized primarily for educational and research activities, rendering them less effective in managing regional and public service functions. A key aim of this research is to identify regulatory pathways that could enhance the long-term efficiency of Hungarian higher education institutions and strengthen their regional engagement. This study employs a qualitative research methodology, including a detailed analysis of institutional regulatory frameworks and sectoral regulations in higher education, with a particular focus on the organisation and management of public health services, with the objective of identifying regulatory constraints and formulating recommendations for reform at both the sectoral and institutional levels. The findings indicate that existing university governance structures are not adequately equipped to address the increasing complexity of regional healthcare service provision. The study identifies specific regulatory and organizational barriers at both sectoral and institutional levels that hinder the effective integration of education, research, and public service functions. Furthermore, it proposes targeted regulatory reforms to mitigate these challenges and enhance institutional responsiveness. The originality of this research lies in its exploration of the intersection between higher education governance and the governance of healthcare systems, a domain that has been slightly overlooked in the Hungarian context. By addressing this gap, the study provides a valuable framework for future policy reforms and underscores the pivotal role of universities in regional development and public service delivery.



Catarina Mangas – Susana Monteiro Sardinha	OPSA 2.0: A Multi-Dimensional Approach to Student Success at Polytechnic University of Leiria
Designed as a comprehensive and innovative approach, the Observatory for Academic Success (OPSA2.0) of the Polytechnic University of Leiria (Portugal) aims to enhance academic success and reduce dropout rates, addressing the growing diversity of student profiles in higher education. Through a multi-dimensional framework, OPSA 2.0 is structured around seven interconnected pillars set to: encourage peer/mentor support for new students through the implementation of a Mentoring Program; provide support to first-year students through faculty/tutor guidance under a Tutoring Program; adopt innovative, active, and diverse pedagogical practices through a Pedagogical Training and Development Program; Strengthen self-learning and collaborative work skills through a Special Learning Support Program; create a predictive system to identify students at risk of dropout and academic failure using artificial intelligence and data science, based on a multidimensional assessment of personal, academic, sociodemographic, and social factors (Academic Success Platform); establish collaborative networks with social, cultural, and sports organizations under the Together with the Community Program; Implement the Coordination, Communication, Interaction, and Dissemination Program, ensuring the management and execution of OPSA 2.0 while promoting its activities, engagement, and results within the academic community. OPSA 2.0 positions itself as a benchmark in pedagogical innovation, reinforcing IPLeiria's leadership in driving transformative change in the education sector. This paper presents the methodological framework, developed strategies, and projected impact of OPSA 2.0 in fostering academic success. By integrating technology, pedagogy, and institutional collaboration, OPSA 2.0 offers a holistic and transformative approach to supporting student achievement and mitigating early academic disengagement.	
Julianna Fejes-Nádai	Diplomatic activities of Hungarian universities
The aim of the paper is to give an insight into how universities can contribute to the development of the current international status of their home countries by exercising active diplomatic activities in international context. It is of ever higher importance for the state to present what values, intellectual achievements and innovations their higher education institutions can provide for national and international economic actors. Education and scientific research have been the key focus of operation of universities. Both branches are regarded as parts of soft power, included by cultural diplomacy. It might be most interesting to see how education transfer, international cooperation, students' and researchers'	



international mobility can trigger economic, social and political changes in the country. Industrial and corporate relations of higher education institutions make the academic sphere a stable strategic basis for shaping economies. Sustainability is impossible without a constant willingness and ability to adapt to changes and without a permanent cooperation with other universities. International knowledge transfer serves as a diplomatic tool for the universities to foster economic development by gaining better reputation both in scientific and corporate fields internationally. All the positive changes raise reputation, which may attract a great number of international students and research partners to Hungary. The paper aims to find the factors that make these diplomatic activities of universities efficient, and also attempts to reveal how these activities can raise the number of incoming international students and how they see their career perspectives after graduating in Hungary. The method of the present research is based on secondary literature review, analysis of online press publications and a survey conducted with non-Hungarian students studying at Hungarian universities for more than one semester.



Session 10: Reshaping Work and Security in the Age of Digital Transformation

Ahmed Jamal Ibrahim – Nurulla Bektas	Evaluating DDoS Attack Mitigation Using t-SNE and Random Forest-Based Feature Selection
The rapid advancement of digital technologies across industries and society has elevated cybersecurity to a critical priority, especially given the increasing prevalence of Distributed Denial-of-Service (DDoS) attacks that jeopardize the availability and reliability of online services. This study introduces a novel strategy for mitigating DDoS attacks by combining t-distributed Stochastic Neighbor Embedding (t-SNE) for reducing data dimensionality and Random Forest (RF) for feature selection and classification. Using the CIC-DDoS2019 dataset, the proposed approach demonstrated that t-SNE effectively minimized the number of parameters while retaining essential information. Following this, Random Forest was employed to pinpoint the most critical features for detecting attacks. Experimental findings revealed that integrating t-SNE with RF achieved a detection accuracy of 99.78%, a validation accuracy of 99.63%, and a training accuracy of 99.99%. Furthermore, the method significantly reduced computational overhead, making the model highly efficient and suitable for real-world applications. This research aligns with the broader objectives of advancing technology and strengthening cybersecurity. It offers a scalable, efficient solution to combat DDoS attacks in today's digital landscape. The results underscore the importance of integrating advanced machine learning methods into cybersecurity frameworks to safeguard and sustain modern digital ecosystems.	
Tóth Dorina Anna – Enikő Kovács-Szépvolgyi – Roland Kelemen – Dorina Anna Tóth	From Voice to Action: Upholding Children's Right to Participation in Shaping Policies and Laws for Digital Safety and Well-being
While the digital environment offers new opportunities to realise children's rights, their right to participation— as enshrined in the UN Convention on the Rights of the Child — remains insufficiently reflected in digital policy frameworks. This study analyses the right of the child to be heard in academic literature and in the existing international legal and EU regulatory frameworks, with a particular focus on the regulatory challenges posed by the digital environment and its impact on children's rights. It explores how children participation right is incorporated into EU and national digital policies and examines how genuine engagement can strengthen children's digital resilience and support their well-being. By applying the 7C model of coping skills and	



analysing its interaction with the right to participation, the study highlights how these elements mutually reinforce the achievement of the Sustainable Development Goals (SDGs). Through a qualitative analysis of key strategic documents and relevant policy literature, the research identifies the tension between the formal acknowledgment of children's right to participate and its practical implementation at law- and policy-making levels within the digital context. Although the European Union's examined strategies emphasise children's participation, their practical implementation often remains abstract and fragmented at the state level. Despite a much stronger emphasis on child participation in the new BIK strategy, this is not reflected at state level in the change between BIK and BIK+.

Roland Kelemen – Ádám Medvác

Cybersecurity Regulations and Software Resilience: Strengthening Awareness and Societal Stability

As the digital space continues to evolve, software security is becoming increasingly critical, particularly due to the growing complexity of cyber threats and the societal risks posed by vulnerable systems. The European Union's Cyber Resilience Act (CRA) and the United States' cybersecurity regulations both aim to enhance digital resilience by regulating the development and market entry of software products. These measures not only safeguard technological infrastructure but also contribute to increasing cybersecurity awareness, thereby directly strengthening societal resilience.

This presentation provides a comparative analysis of European and American regulations, focusing on security requirements throughout the software development lifecycle, industry responsibilities, and efforts to enhance user security awareness. It particularly examines the cybersecurity standards mandated by the Cyber Resilience Act, assessing how they encourage manufacturers and service providers to adopt proactive security design and risk mitigation strategies.

The study highlights that integrating cybersecurity requirements into the entire software development process is not merely a technological issue but also a key factor in societal stability, reducing digital threats, improving user security awareness, and fostering a more secure digital ecosystem. Findings confirm that regulatory measures play a crucial role in establishing a sustainable cybersecurity culture, which aligns with the SDG 16 objectives, promoting strong institutional frameworks and the rule of law, thereby enhancing societal resilience against digital threats.



Susana Sardinha Monteiro	Shaping the Future: European Union 's bold gamble on trustworthy Artificial Intelligence
	Unlike other global approaches that emphasize economic competitiveness, the European Union's approach to artificial intelligence (AI), envisions AI as a tool for human empowerment rather than control or exploitation, prioritizing ethical development, societal well-being, and fundamental rights. A risk-based regulatory framework is central to this vision, categorizing AI systems into unacceptable risks, high risk, limited risks and minimal or no risks. While this regulatory approach sets a global precedent for responsible AI governance, it also presents challenges, such as balancing innovation with compliance, avoiding overregulation that could stifle competitiveness, and addressing investment gaps that may hinder Europe's leadership in AI. Additionally, internal fragmentation within the EU makes harmonizing AI adoption across Member States complex. Aligned with the human-centric AI vision we will explore the opportunities for AI-driven innovation, education, and workforce reskilling. By promoting digital literacy and ethical AI awareness, EU seeks to prepare its individuals for an AI-driven future. A future in which AI not only enhances human potential but also serves as a catalyst for creativity, collaboration, and innovation, rather than merely replacing human capabilities. This human-centric approach is not just a regulatory necessity but a strategic opportunity to shape technological progress through ethical and inclusive innovation. By prioritizing human dignity, security, and fairness, the EU is paving the way for an AI landscape that is not only powerful but also responsible setting a global standard-setter in AI governance, striking a balance between technological progress and ethical responsibility.
Aron Soma Barták – Máté Trenyisán	The Impact of Digitalization and Technological Transition on the Labour Market – Corporate Strategies for Managing Change from the Perspective of HR and Labour Law
	The processes triggered by digitalization and technological transition today bear similarities to those that occurred during the Industrial Revolution. At that time, technological transformation led to a fundamental restructuring of the entire social framework, including labour market relations. As a result of this development, the modern discipline of labour law emerged, followed later by the scientific study of human resource management. Today, we face similar yet distinct challenges. However, it is crucial to recognize and learn from historical parallels. These can be summarized as follows:



Transformation of Jobs: Just as mechanization and the rise of factories reshaped employment during the Industrial Revolution, digital technologies such as AI, robotics, and automation are now redefining the nature of work.

Reskilling and New Competencies (Upskilling): As in the past, today's technological transition necessitates the acquisition of new skills. Digital competencies are becoming increasingly essential.

Unemployment and Workforce Adaptation: In the early stages of the Industrial Revolution, many workers faced unemployment, while others found new opportunities through retraining. Similarly, digital transformation may lead to temporary job losses, but reskilling and adaptation to new technologies will simultaneously create new employment opportunities.

Working Conditions: The Industrial Revolution initially brought poor working conditions, which were later improved by trade unions and labour regulations. Today, digital workplaces present new challenges, such as remote work and the balance between professional and private life.

Our objective is not only to explore the parallels between these two historical phenomena but also to examine, from a corporate perspective, the tools provided by HR and labour law sciences - such as performance management, flexible work arrangements, and occupational safety regulations - that may be relevant in managing this transition.

Csilla Dallos – Attila Pongrácz

The Use of Artificial Intelligence (AI) in Job Searching

Determining the problem

The growing presence of artificial intelligence (AI) in the labor market has brought forth significant changes in how candidates search and apply for positions. However, these innovations are not uniformly adopted or perceived across different industries and generational groups. Preliminary observations suggest that IT and marketing professionals, as well as those employed by large organizations, demonstrate a higher propensity to utilize AI-driven tools (e.g., CV optimizers, job recommendation platforms), whereas individuals working in education, training, or small-scale enterprises are often less inclined to do so. Another concern is that many jobseekers are not fully aware of the potential benefits and functionalities of these AI tools, which may affect the overall acceptance and positive perception of such solutions. Additionally, generational factors may play a major role in the degree to which AI tools are integrated into one's job search strategy, potentially influencing satisfaction and perceived effectiveness.

Our research focuses on three main hypotheses: 1. Industry- and organization-specific differences; 2. Awareness and positive reception; 3. Generational differences



Measurement, data collection: the study employs a mixed-method approach (online distributed questionnaire and a series of in-depth interviews).

Results and Dissemination

The empirical findings will be analyzed to determine the extent to which industry affiliation, awareness of AI tools, and generational factors influence the adoption and perception of AI in the job search process. The results will offer evidence-based recommendations for career advisors, employers, and platform developers on how to tailor AI tools to varying user needs and improve their accessibility and acceptance.

László Aschenbrenner	Performance Optimization of Windows Systems: User Optimization Practices and System Inefficiencies
The performance of Windows operating systems is often hindered by unnecessary background processes, redundant services, and pre-installed applications. While system optimization can significantly improve efficiency, the extent to which users are willing to optimize their systems remains unclear. This study investigates two critical aspects: (1) user engagement in Windows optimization and (2) the prevalence of unnecessary system components that impact performance. The research has analyzed a broad spectrum of Windows services, background processes, and pre-installed packages, identifying their impact on system resource consumption. Benchmarking methods have been employed to quantify performance gains achieved through systematic optimization. The results reveal that a considerable number of processes and services operate without direct user benefit in the background, contributing to unnecessary resource utilization. Despite this, a significant proportion of users remain unaware of these inefficiencies or lack the technical expertise to address them. Through extensive analysis via quantitative and empirical testing, this study categorizes non-essential Windows components and evaluates their effect on system responsiveness, memory usage, and overall efficiency. The findings highlight the need for accessible optimization methodologies that align with user willingness and technical capabilities. By bridging the gap between system inefficiencies and user engagement, this research contributes to the development of effective, user-friendly optimization techniques. These findings have broad applicability, offering valuable insights for both individual users and enterprise-level system management, ultimately enhancing the efficiency and longevity of Windows-based environments.	



Shairil Bhardwaj

Navigating Workplace Learning and Digital Transformation: Germany's Human Resource Development Challenges

As digital transformation continues to disrupt sectors globally, organizations must adapt quickly to remain competitive. In Germany, a country known for its strong industrial foundation and emphasis on high-quality manufacturing, the convergence of workplace learning and digital transformation poses new difficulties for human resource development (HRD) practitioners. This talk digs into the complications that German organizations face as they navigate this changing terrain.

Apprenticeships, vocational training, and lifelong learning have always been central to the German approach to human resource development. However, the fast adoption of digital technology necessitates a rethinking of established learning paradigms. Bridging the gap between traditional training approaches and the ever-changing skill sets necessary in the digital era presents challenges. Furthermore, guaranteeing the inclusion of digital learning programs presents problems, particularly for portions of the workforce that are less familiar with technology. Moreover, cultural factors, such as the strong emphasis on job security and hierarchical structures, influence the adoption of digital learning initiatives. Resistance to change and fear of technological displacement may impede progress, highlighting the need for effective change management strategies.



Session 11: Generations, Ageing, and Social Change

Agnes Kiss – Anikó Benyák – Attila Kurucz	Generational differences in workplace loyalty and commitment: trends and challenges
Out of the 6 generations currently presented on the labour market - veteran, baby-boomer, X, Y, Z and alpha - 3 are active, further diversifying the composition of the workforce and making not only socialization at work more complex, but also the development of integration, inclusion, retention, motivation and loyalty. Flattening organizational structures mean that more and more generations are forced to work side by side, posing new challenges for organizations. Our research aims to investigate the development of workplace loyalty and commitment among different generations. In recent decades, the labor market has undergone significant changes, influenced by technological advances, globalization and changing social norms. These processes have had a strong impact on the attitudes, values and motivations of different generations in the workplace. Our study focuses primarily on the loyalty and commitment factors of the generations currently active in the labor market, emphasizing and comparing the attitudes that determine each generation's commitment to their employer. The results of our research not only contribute to a better understanding of generational differences, but also provide practical advice for organizations to understand and develop workplace loyalty and commitment as a prerequisite for competitiveness. Keywords: loyalty, commitment, generational differences, workplace attitudes, Generation X, Generation Y, Generation Z.	
Adél Vehrér – Csaba József Kőmíves	Examining self-sufficiency preferences in Western Transdanubia
The pursuit of self-sufficiency has been characteristic of folk culture for many centuries. In particular, in rural peasant economies, people sought to independently produce food of plant and animal origin. Seasonal products were preserved, so they could be consumed all year round, and the surplus could be sold in urban markets. This process changed by the middle of the 20th century with the spread of a wide range of commercial products. Thanks to the socio-economic changes of recent years, the pursuit of self-sufficiency is experiencing a renaissance today, and is present in almost every household to some extent. The aim of the study is to investigate the sources of vegetables, honey, chicken eggs and fruit used by the inhabitants of Western Hungary. In this context, the empirical research seeks to answer how demographic factors such as age, gender, place of residence, and occupation of the respondents influence their food purchasing preferences and the extent to which they attach importance to	



healthy eating. The research was quantitative, with a non-representative sample (N=286) collected through an online questionnaire survey from the Western Hungary and Pest county areas. The sample was selected at random. The data were processed using SPSS 25.0 statistical software. The main findings of the publication are that the relationship between occupation and dietary habits did not show significant differences, while the preference for grilled vegetables and the commitment to healthy eating showed significant differences by place of residence, gender and age.

Adél Vehrér – Zsolt Pálfalusi

The Application of Virtual Environments and Artificial Intelligence in Higher Education: Experimental Findings in Philosophy Teaching

This study investigates how virtual environments and artificial intelligence (AI) can support university students' learning processes, with particular attention to Generation Z's digital learning preferences. To this end, an experiment was conducted at the Apáczai Csere János Faculty of Pedagogy, Humanities, and Social Sciences at Széchenyi István University, where the Walter's Cube technology and a trained AI mediator were integrated into the teaching of ten topics in a philosophy course. The curriculum was aligned with the subject's syllabus and included images, quotes, and explanations related to iconic figures in philosophy. Students had the opportunity to interact with the AI mediator. As part of the research, 77 students explored the material across ten 3D "rooms" while interacting with the AI mediator. At the end of the experiment, participants completed a ten-question anonymous test and provided feedback on the method's effectiveness. The results indicate that the majority of students rated the virtual material as highly effective. Final exam results showed that 80% of students who used the virtual material achieved good or excellent grades. Feedback indicated that the 3D presentation and AI mediator collectively increased motivation and deepened the learning experience. Our research contributes to the development of digital teaching methods and highlights new directions for further experiments in higher education, including the method's applicability to other subjects and future technological advancements.

Tamara Csollán – Tímea Laczkovits-Takács

Civil organizations in Győr and the region, in the light of volunteering opportunities of the transitioning age group

The trend of an aging society experienced in Europe, including Hungary, and the extension of the post-parental period in family life justify a more comprehensive examination of the concepts related to active aging than ever before. This study explores the role of the different civil organizations operating in the city of Győr and the Győr-Moson-Sopron County, focusing on the community participation



opportunities of the age group between 50 and 60 years old (called the age of transition). The research highlights the importance of community engagement within the examined age group, and discusses the key functions and the different types of volunteer activities. Additionally, it examines the main motivations behind volunteering, as well as the differences in the motivations of the younger and older generations. The study also collects and presents a list of civil organizations in the Győr-Moson-Sopron County, through which the individuals of the transitional age (1) can engage in voluntary activities, or (2) can participate in programs organized involving volunteers, and describes the civil organizations that are willing to open to the examined age group in their future activities. In addition to exploring the practices of local civil organizations, the research also examines their effectiveness and shortcomings. The study also addresses the role of the local governments in social participation and in promoting and expanding the community engagement opportunities of civil organizations.

Magdolna Benke	The Contested Role of Vocational Training Institutions in Reducing Regional Disadvantage in Hungary
The role of vocational education and training (VET) in reducing regional and social inequalities is particularly important in areas where secondary VET is the highest level of schooling. This situation is most pronounced in disadvantaged areas. The loss of the school and the consequent relocation of families will inevitably lead to further decline and depopulation of the disadvantaged area. The impact of economic considerations has a long-term negative effect on both local education and community life. Sometimes schools in smaller settlements are closed to compensate for the lack of students in the cities. The city school will have a sufficient number of students, but this will be at the expense of the backward area. The additional role that vocational education could play in the development of local society, in stopping the backwardness of a disadvantaged area, is not taken into account behind the primacy of traditional economic considerations. In Hungary, municipalities and their institutions have lost their former power due to the strong centralization process in recent years. One of the negative consequences of increasing centralization is that it slows down and makes impossible the development of internal, bottom-up innovation efforts. I believe that local innovation can be successful if it is actively supported by local education and training institutions. In underdeveloped areas, this may be a task for secondary vocational schools in particular. My paper shows that building partnerships among potential actors in underdeveloped areas is a challenge. My conclusion is that the low prestige of VET and the marginalization of the wider social context of VET prevent VET institutions from being partners in regional development projects. This situation further hinders local development in	



underdeveloped areas. The method of my research is literature review and document analysis.

Maria Arapovics

Sustainable community services and practices

The Community and Civil Research Group of the ELTE TáTK investigated examples of sustainable community activities of Hungarian and foreign organisations and institutions within the framework of the Social Innovation Laboratory. The main aim of the research was to find local responses and solutions to global problems in a world of crises.

Using qualitative research methods, focus groups and interviews, the research defined the concepts of community service, community practice and working methods by analysing nearly 80 practical examples and 65 interviews. The practical examples were used to create a 'sustainable community model' and a methodological guide for community developers on how to implement community services.

The steps of the process presented in the model are based on building community involvement and participation, mobilising local resources and capacities, creating community-based services, building sustainability and self-sufficiency, and consolidating innovative training and community working practices. The research has resulted in the creation of an online Community Repository, which provides community responses to the 17 UN Global Sustainability Challenges and Goals (2015) – economic growth, social inclusion and environmental protection – by organising the collected community services, small community practices and working methods around seven community development perspectives: governance, place, sustainable livelihoods, culture and the arts, identity, belonging and connection, human rights and resilience, engagement and knowledge (Kenny et al 2018). The presentation will share methodological findings and exemplary practices, focusing on the characteristics of the model.

Balázs Németh

**Understanding and Promoting University
Lifelong Learning through the Senior Academy
of Pécs for Better Health and Well-being**

This innovative practice paper will elaborate upon the roles and responsibilities of the University of Pécs in formulating the Pécs Learning City-Region programme so as to integrate and respond to diverse learning needs of vulnerable social groups to reach for better health and well-being through lifelong learning actions. Beyond some examples of specific collaboration with civic activists in raising better participation around intergenerational and intercultural learning for better health, sustainable community and skills development, we will highlight the model of the senior academy of the



University of Pécs as an innovative case for special geronto-education as a key part of university lifelong learning based on the needs of senior citizens so as to facilitate active ageing, diversity and better performance in learning in later life. This innovative practice shows potentials of transfer to other practices of Learning Cities.

**Anikó Makkos – Adél
Vehrer – Noémi Pap-
Módy**

Disciplinary Differences in Segmenting the Ageing Stage of Life

Today's demographic changes have brought the study of ageing to the forefront of many disciplines. The very concept of ageing has changed over the last two decades. At the turn of the millennium, the onset of old age was defined in the literature as the age of 45. Later, and particularly as proposed by the WHO, a scientific consensus has developed that the onset of ageing is 50 years and the onset of old age is 65 years. With increasing life expectancy, these cut-off ages have been steadily rising, with the onset of old age now exceeding 70 years in recent literature. Despite these changes, different scientific disciplines have not clarified the definition of old age and the onset of ageing and still use a number of different age groups. This research set out to collect definitions of ageing and old age from the literature on the subject across different disciplines. Four disciplines were selected: health sciences, human resource management, marketing and leisure. In the qualitative research, 25-25 studies per discipline are examined that attempt to segment the 50+ age group. The studies cover populations from Europe, Asia and North America. The paper compares the data from the studies by location, date of study and age grouping.



Session 12: Identity, Power, and the Challenges of Coexistence in the 21st Century

Csaba Sándor Horváth – Ildikó Lőwi	Xenophobia disguised as tolerance? The situation of Cuban and Polish guest worker migration in the late Kádár era
The presentation examines the political, ethnic and social questions of transnational guest worker migration related to the foreign ethnic and cultural workforce arriving in Hungary in the late Kádár era. The main question of the research is whether the institutionalized form of socialist-type exploitation which reflected the nature of colonial oppression does appear in the state socialism of the Kádár era? A further question arises as to whether the theory of socialist ideology suggesting racial equality and the paradox of institutionalized oppression evoking historical times which was colonial in nature and based on ethnicity are compatible? The examined sample consists of a group of Cuban and Polish guest workers performing labour in Hungary in the 1980s. The methodological structure of the research material is basically provided by international and domestic literature and statistics, archival documents, press sources as primary sources and the analysis of guest workers' interview materials. The analysis and synthesis of the sources verify the credibility and objective approach of the research. The events arising from this, in one hand, confirm the reproduction of the late Kádár era socialist-type colonial exploitation, and on the other hand, define the dilemmas of the embedding of labour migration in the host society, the political and social acceptance of the phenomenon, which is linked to latent ethnic and overt national stereotypes. As a result of the study, patterns emerge that include factors that support or oppose the acceptance of labour migration with different cultural identities and solutions to the dilemmas that arise in this regard.	
Ágoston Winkler – András Veöreös – Tomas Nigrin – Csaba Sándor Horváth	Sustainable transport model change Comparison of the Hungarian and Czechoslovakian model focusing on 1968 Hungarian transport policy concept
Starting with the introduction of Soviet-style planned economy, the railway policy of Hungary and Czechoslovakia was also transformed, as the entire economy became state property. At the same time, road motorization became a constantly growing competitor of fixed-track transport. Both countries had to revise their transportation policies and seek for measures which would increase the efficiency of the system. To rectify this, in Hungary the Railway Research Institute was established, which developed the principles of traffic distribution	



between public roads and railways from the beginning of the 1950s. The purpose of new policy, among other things, to establish reasonable transport and the division of labour between railways and roads, integration into international traffic, electrification, dieselization, narrowing travel options, modernizing high-traffic industrial tracks, and finally diverting traffic from low-traffic and uneconomically operating lines to public roads and districting. During the implementation of the program, 2,000 km of railway lines deemed insignificant rate of traffic were eliminated, which represented 20% of the railway network at the time. The decision, which was made fifty years ago, seemed rational at the time, still defines the public transport of Hungary to this day and has a significant impact on landscapes and townscapes, as consequently, dozens of bus stations and bus stop buildings were built all over the country, and hundreds of railway buildings turned into decay due to the lack of use. Czechoslovakia endeavored the rationalize the railway system as well and tried to dismantle the local railway lines with low traffic. In contrary to Hungary the Czechoslovak Ministry of Transportation was able to dismantle only about 150 km of railway lines. The article reviews the approach of the changes in transportation policies and show the differences between the Hungarian and Czechoslovak approach and also results of the reforms.

Zsófia Máté – Lívía Ablonczy-Mihályka

'Turkish gas' or 'Greek gas'? – The role of the energy of Cyprus in the Eastern Mediterranean and the Turkish – Greek conflict

Recent years energy resources have been the greatest political advantage that a country can have. It is accepted that international relations, including international conflicts, are driven by political, economic, geostrategic and energy ambitions. Cyprus, the third largest island in the Mediterranean region, is influenced by tensions over the Turkish-Greek conflict and energy discoveries. More than a decade ago, the first offshore gas field, Aphrodite, was discovered in Cyprus but its exploitation has been delayed despite its abundant gas export potential. Since 2018, a number of major energy discoveries have further underlined the island's extraordinary potential and its international role.

The energy discoveries around Cyprus, and their subsequent exploitation, have been politically stymied, driven by the Turkish-Greek conflict over the country's division. The clash of Turkish-Greek differences is not new, as the Cyprus settlement issue has been pending since 1974, and its complexity makes it a geopolitically important conflict.

The aim of the study reported in the paper is to explore the impact of the Turkish-Greek conflict on Cypriot natural gas exploration which has affected the country's internal and foreign policy, therefore our research looks at the main issues that concern the importance of Cypriot natural gas in the energy policy of



the countries in question. Our research is based on secondary sources and the discussion focuses on the topics: (1) what extent the settlement in Cyprus will be hindered in the future by the Turkish and Greek Cypriot parties fighting over the rights to extract natural gas, (2) in what form Cyprus will be able to sell its energy sources in the future. The findings are believed to contribute to the better understanding of energy policy as well as to the creation of more effective policy how to resolve geopolitically important conflicts.

Susana Sardinha Monteiro

**Rethinking European Union Citizenship:
Legal Ambiguities, Digital Innovation, and
Civic & Political Engagement**

Established in 1992 by the Maastricht Treaty, European Union citizenship was set as a complementary status to national citizenship. EU citizenship is granted automatically to anyone who holds the nationality of an EU country, conferring a set of fundamental rights that enhance civic and political participation.

Some of these rights are actively exercised through official online portals and platforms, providing citizens with direct access to European institutions. These digital tools not only facilitate social, civic and political engagement but also strengthen the connection between citizens and the EU, fostering a deeper sense of belonging and shared identity.

However, European Union citizenship faces significant challenges in a rapidly evolving context marked by digitalization, social transformations, and shifting educational paradigms. This study examines how emerging technologies and digital tools are reshaping European citizenship, enabling new forms of civic engagement—such as e-participation mechanisms, online petitions, and transnational public consultations—while simultaneously highlighting persistent legal and structural barriers to inclusivity.

While digital tools enhance civic and political participation, barriers remain, including the digital divide and misinformation. Unequal broadband access and digital literacy gaps hinder engagement. Social media-driven disinformation erodes trust in EU institutions, fueling polarization. Education is key to addressing these challenges by integrating digital citizenship and media literacy. Expanding digital access and strengthening protections against misinformation can foster a more inclusive European citizenship.

By adopting an interdisciplinary approach, this paper aims to present and explore existing digital tools that facilitate the exercise of European citizenship rights and propose strategies to bridge digital divides, expand EU access, and boost civic and political engagement.



Patrik Eszes – László Buics	Examination of the climate, migration and demographic challenges of the European Union
In the contemporary era, the European Union (EU) faces persistent and evolving challenges, including climate change, migration, and demographic shifts. Since its foundation, the EU has had to navigate both internal and external crises, ranging from economic instability and political conflicts to environmental and social transformations. The frequency and complexity of these challenges have increased over time, necessitating continuous policy responses and adaptive strategies. The primary objective of this research is to conduct a time-series analysis of the challenges that have affected the EU, examining potential correlations between these challenges and the EU's responses. This study utilizes data from the Eurostat database, ScienceDirect, Scopus, and Web of Science. The analysis focuses on identifying relationships between climate change, migration patterns, demographic trends, and the occurrence of various challenges within the EU. By exploring these interconnections, the study aims to determine whether specific patterns emerge over time, how different variables influence one another, and whether increasing frequencies of challenges correspond to shifts in migration and demographic trends. Additionally, the research seeks to understand how globalization has shaped the nature and frequency of these challenges, particularly in terms of economic pressures, labor market transformations, and cross-border movements. To address these questions, several statistical methods have been employed, including the Chi-squared test, correlation analysis, and regression analysis. The results will provide insights into the interrelationships among these variables, offering a better understanding of their mutual influences. These findings can contribute to policy recommendations aimed at fostering a more sustainable and resilient EU structure in the context of globalization. Keywords: European Union, migration, climate change, demography, globalization, statistical analysis.	
Muhammad Safdar	Fostering truth, forgiveness, and reconciliation: The impact of interfaith dialogue in peacebuilding on this shared planet
Knowledge that represents different traditions has become an essential tool in the process of raising truth, forgiveness, and reconciliation for peacebuilding in the context of religious and cultural conflicts. The objective of this paper focuses on analyzing theoretical and practical aspects of interfaith dialogue as a peacebuilding tool and conflict resolution strategy. So, this paper has adopted qualitative research methodology to analyze available secondary sources	



descriptively. Literature reveals that societies share the common moral core that can help them reunite, and followers of the different faiths remain hostile to each other with little attempt to restore coexistence trust. Through a theological and socio-political lens, this paper helps to understand the role of interfaith interaction in changing an aggressive relationship into a partnership for peacebuilding. It offers recommendations for the harmonization of interfaith dialogue with truth and reconciliation paradigms.

Nóra Horváth

Art as Creative Industry in the 21st Century

Creative industry became one of the magic words of the 21st century. Artists from all around the world try to find their places in the changing world of art, because the notions of sustainability, innovation and business mixed the earlier structures of artlife. „Art for art’s sake” cannot be the aim anymore. In 2018, Routledge published a book with the title The Classical Music Industry, but it has become typical in all areas of classical art that the level of support is determined not only by artistic qualities, but rather by marketability. Agencies have also been established in Hungary in recent years with the aim of supporting fashion, the film industry and the porcelain industry, taking into account the European Union guidelines. However, in the changing world, there are more and more difficulties, because Europe sets restrictions for itself that most Asian countries do not take into account. Thus, in the field of creative industry, maintaining competitiveness is becoming an increasing problem. In my presentation, I am looking for the answer to what methods a country as small as Hungary, which is capable of producing high-quality industrial art products in certain areas, can connect to the bloodstream of the creative industry. I also find it important to examine the ethical issues that are trying to shape the world of contemporary design, but in the absence of legislation, they only serve as guidance for designers and buyers who are sensitive to it.



Session 13: Business Strategies and Economic Development

Wajiha Kassem Alshar – Szabolcs Rámháp	Artificial Intelligence in Climate Adaptation: Opportunities and Challenges for Sustainable Business Models
This study examines the role of artificial intelligence (AI) in enhancing climate resilience across industries, focusing on innovative business strategies to address global challenges. The objective is to address deficiencies in AI frameworks, focusing on developing countries with resource and technical limitations. The study emphasizes the significance of AI in fostering sustainable practices, particularly in climate change mitigation. A systematic review of 42 high-quality studies, published between 2010 and 2025 in the Scopus database, was conducted using the PRISMA framework. The analysis identifies key AI applications, technologies, and challenges. Data were categorized according to industry applications, technological contributions, and obstacles. Key findings indicate that AI has the potential to enhance climate risk assessment through predictive modeling, facilitate adaptive decision-making via scenario analysis, and optimize resource allocation for sustainability. Applications in renewable energy, precision agriculture, and disaster management were highlighted. However, significant barriers include ethical concerns like algorithmic bias and data privacy, technical complexities, and high financial costs. The review emphasizes the necessity of collaborative approaches, such as public-private partnerships, and the importance of conducive policy frameworks. The research's originality lies in its comprehensive synthesis of AI applications for climate resilience, offering actionable insights for scholars, practitioners, and policymakers. The findings emphasize AI's potential to drive sustainable business models while calling for interdisciplinary research to address scalability and ethical implications in resource-constrained environments.	
Anett Ugranyecz – Szabolcs Rákosi	Enhancing Human Resource Management to Foster Sustainable Operations in a Logistics Company
The application of Artificial Intelligence (AI) is increasingly transforming traditional recruitment and selection processes by offering time and cost efficiency while enhancing objectivity. This study aims to provide a comprehensive exploration of AI's role in this domain, with a special focus on its advantages, limitations, and ethical and legal implications. Particular attention is given to how AI can be utilized in blue-collar recruitment and how new technologies are adopted by small and medium- sized enterprises (SMEs). The research is based on a combination of primary and secondary methods. The recruitment and selection processes of the digital age, as well as the	



development of AI and its application in business practice, are examined in the literature review. Empirical data were collected through a questionnaire survey investigating the experiences and attitudes of 52 recruitment professionals towards MI. Data analysis was carried out using statistical methods to reveal the challenges and expectations of recruiters.

The results indicate that while AI-based solutions can improve recruitment efficiency and speed, their implementation shows significant differences between large companies and SMEs. The paper concludes that recruitment professionals often lack awareness of AI-related data management regulations, which poses a substantial barrier to ethical and lawful application. Furthermore, it has been proven that AI does not always present an advantage, particularly in high-volume blue-collar recruitment, where human factors remain critical.

The originality of this research lies in its comprehensive insight into Hungarian recruitment professionals' attitudes toward AI and its practical recommendations for the successful and ethical integration of this technology. Based on the findings, it is emphasized that educational and informational support is crucial for adopting AI, particularly considering the unique characteristics of SMEs and blue-collar segments.

Szabolcs Rákosi – Patrícia Horváth – Attila Pongrácz

Exploring the Competence Development Needs, Challenges and Opportunities of Businesses in Győr-Moson-Sopron County

The study examines the competencies of blue-collar employees and managers of organizations operating in Győr-Moson-Sopron County with different activities, sizes, and ownership backgrounds. The aim of the research is to analyse the needs and demands of organizations in connection with the development of competencies by evaluating the expectations of companies to ensure that, as part of the ongoing collaboration between Széchenyi István University and the Chamber of Commerce and Industry of Győr-Moson-Sopron County, the University offers development programs to business entities which best meet the needs of enterprises. The relevance of the study lies in the fact that the examined region not only benefits from advantageous effects of the Budapest – Vienna – Bratislava “golden triangle”, but also faces competition from the economic pull of these metropolitan areas. As a result, a critical factor in maintaining organizational competitiveness is the existence and continuous development of employees' professional and personal competencies. As part of the research, the literature on corporate competence development programs was reviewed, followed by a questionnaire survey in which representatives from 58 enterprises declared the needs and requirements of their company concerning competence development, complemented by the conclusions of two expert interviews. The findings indicate that the short-term, micro-certified development programs of the University are the most effective in meeting the



needs of enterprises. The study provides concrete, practical recommendations to support this alignment, thereby significantly contributing to the economic development of the region through the enhancement of human resources.

**Boglárka Bakó – Nikolett
Trenyisán-Papp**

**Knowledge and habits of taking out
insurance, and the challenges of the
digitizing insurance market**

The knowledge and the habits of taking out insurance have evolved over time, especially as the digital transformation of industries has grown. Many people still prefer face-to-face interaction with an agent to feel confident about their decisions. Insurance and InsurTech companies need to overcome this gap by providing clear, transparent information in a user-friendly way. In the past, consumers may have depended on agents for advice, but now, with the rise of digital tools, comparison websites and online research have made it easier to understand various policy options. However, this also requires a certain level of digital literacy.

The insurance sector, riding the wave of the FinTech phenomenon, has been expanding rapidly, with a slew of firms having emerged to provide so-called 'InsurTech' services. These services incorporate concepts such as blockchain, artificial intelligence, digitalisation, and the sharing economy to various aspects of the insurance industry. The promise of various benefits as well as increasing efficiency and lowering costs are brought by the profusion of technology not only for insurers and intermediaries, but also businesses or consumers as end-users of insurance.

However, the development of InsurTech and the digitization come with corresponding risks and regulatory concerns that are not currently accounted for by the traditional regulatory model. The insurance industry is heavily regulated. As more companies move to digital platforms, it can be difficult to ensure their compliance with different national and EU regulations.

In our paper, we use questionnaire research to assess the knowledge and habits of Hungarian consumers regarding insurance, focusing especially on the challenges caused by the digital transition. In addition, we map the relevant Hungarian and international literature, EIOPA reports and Eurobarometer surveys in order to identify obstacles incurred and develop proposals for their solutions.



Elizabeth Ezech	Evaluation of the Effectiveness of Logistics and Supply Chain Management to Enhance Customer Satisfaction in the Fast-Food Delivery Sector: A Study in Gyor, Hungary
This study explores how logistics and supply chain management operations can intensify customer satisfaction in the fast-food delivery sector. It delves into key questions such as how delivery times, service quality, and order accuracy impact customer satisfaction and examines the logistics strategies adopted by fast-food service providers. Additionally, the study looks at theoretical frameworks to better understand the connection between supply chain management practices and customer satisfaction, the role of service quality in shaping perceptions of logistics efficiency, and how technology can optimize supply chain processes. The study began with an initial keyword search, identifying 1,099 articles from ScienceDirect and 270 from Scopus. After eliminating 14 duplicate articles and applying strict inclusion and exclusion criteria, the pool was refined to 114 articles. A deeper screening based on titles further narrowed this to 44 articles. Guided by the PEO model, open-access articles from the Scopus and ScienceDirect databases were selected through a PRISMA screening process and analyzed in detail. In the presentation of the study, I will be presenting the outcome of the survey conducted. The study will provide actionable insights and practical recommendations for local fast-food businesses. By pinpointing the key logistical factors that shape customer experiences, it will offer valuable guidance for improving service quality and operational efficiency. With these findings, fast-food providers can better understand how to enhance their logistics operations and deliver greater satisfaction to their customers.	
Mohammad Fakhrol Islam – Ali Shojaee – Islam Md Rashed – László Vasa	Sustainable Practices, Resource Reconfiguration, and Firm Performance: Insights from A Dual-Lens Quantitative Analysis
The era of technological innovation has begun such that firms in all manufacturing industries have been heavily examining firm performance during disruptive events. The extant literature shows that investments in firm resources and operations alone do not create comparative benefit; instead, organizations need to generate capabilities and resources that rival organizations find hard to meet. Portraying the resource-based theory of the organizations and recent studies in firm performance, this paper will (1) reconfigure resources and sustainable operations that in combination to achieve a high level of firm performance (2) investigate the hypothetical relationship	



based on the dimensions of resource reconfigurations and sustainable firm practices to build firm performance using structural equation model (SEM) (3) produce sufficient configurations of causal recipes based on the complexity theory that lead to particular outcome using fuzzy-set Qualitative comparative analysis (fsQCA). The findings of this study will empirically examine the validated theoretical framework and offer insights into how sustainable resources and practices lead to achieving firm performance. The core contribution of this study will reveal that employing sustainable resources and practices for the application of existing capabilities in combination with practices for establishing and exploring new operational activities and resources strengthens the firm's capability to manage disruptive events and respond to them rapidly.

Reza Mohammadpour – Paniz Donyadari – Neda Tayefeh	An investigation over consumer preferences in fruit juice industry- A case study of Iran
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Packaging plays a crucial role in consumer purchasing decisions, especially in the food and beverage sector. This study explores the impact of various packaging attributes—type, color, and price—on consumer preferences for fruit juice products in Tehran, Iran, using conjoint analysis. By surveying 384 respondents, the study identifies key trade-offs consumers are willing to make when choosing between different packaging designs. The results show that color is the most influential attribute, with warm colors being the most preferred option. Additionally, among package types, plastic ones were favored over other types. Price was also found to have the least impact when choosing a beverage product like fruit juices. Gender and age differences were noted, with women preferring warm colors and younger consumers favoring warm color schemes. The findings suggest that businesses can optimize packaging designs to align with consumer preferences and enhance product appeal.

Natig Ismayilov	The Fintech Paradigm Shift: Reinventing Financial Infrastructure and Building Consumer Trust in the Age of Digital Innovation
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The accelerating evolution of financial technology (fintech) is fundamentally redefining global financial infrastructures, driving efficiency, security, and accessibility in digital transactions. This transformation is propelled by advancements in blockchain technology, artificial intelligence (AI), machine learning, open banking, and decentralised finance (DeFi), which are reshaping financial services, risk management, and regulatory frameworks. Central to this disruption is the imperative of consumer trust, a pivotal factor influencing fintech adoption and market expansion.



This study provides a comprehensive analysis of the fintech ecosystem, focusing on digital payments, smart contracts, cybersecurity protocols, and AI-driven financial analytics as key drivers of change. While fintech fosters financial inclusion and operational agility, challenges persist in the form of data privacy concerns, cybersecurity risks, algorithmic bias, compliance constraints, and consumer resistance to digitalization. Regulatory ambiguity further complicates the landscape, necessitating stronger governance models, ethical AI applications, and policy interventions to ensure equitable financial innovation. Drawing on empirical studies from Scopus and WoS-indexed journals (2020–2024), this research synthesizes strategic approaches employed by fintech firms to enhance transparency, fortify cybersecurity measures, and improve customer-centric digital experiences. The findings underscore the necessity of balancing technological innovation with robust legal frameworks and consumer-centric trust mechanisms, positioning fintech as a catalyst for resilient, inclusive, and sustainable financial ecosystems. By aligning fintech advancements with regulatory harmonization and ethical AI governance, the study presents actionable strategies to bridge the trust gap, ensuring long-term financial stability and user confidence in the digital era.



Session 14: Regional Development and Local Communities

Zoltán Ködmön	Water Security and Stability in Africa: Hungary's Development Engagement and Social Impact
The Sustainable Development Report 2023 showed that 2.2 billion people lacked access to safely managed drinking water in 2022, with 703 million unable to access even basic services. Sub-Saharan Africa is among the most affected regions, where the water supply ranked as one of the top governance challenges in 39 surveyed countries by Afrobarometer in 2024. Access to safe drinking water is critical for human well-being, influencing health, education, and poverty reduction. Studies show water scarcity hinders child development, forces girls out of school for water collection, and exacerbates poverty cycles. Moreover, inadequate water access drives migration and fosters instability. This research investigates drinking water accessibility across African countries, factors affecting water security, and Hungary's contributions to addressing these challenges. The study highlights regions with the most severe deficiencies and examines where Hungary's engagement could strengthen local water systems, promoting resilience and reducing migration drivers. The findings provide actionable insights for Hungary's international development policies, aligning efforts with the urgent need for water security in Africa. By supporting water projects, Hungary can enhance its global standing while contributing to sustainable development and stability. This research also addresses the academic gap in Africa-focused water security studies, encouraging broader engagement in addressing one of the continent's most pressing challenges.	
Sára Kmeczkó	Tunisia's Foreign Policy Diversification
In recent years, Tunisia has lurched in an authoritarian direction, which has seriously hampered its diplomatic and political leverage in the international arena. The democratic backsliding has opened up talks on the North African country's traditional relations with its Western allies and investors. Strained relations with the European Union and the United States have led to the reorientation of its foreign policy. The shift of Tunisia's diplomatic trajectory was manifest in President Kais Saied's recent outreach to Iran and China, as well as in its recent bid to join BRICS. The presentation will explore the main drivers for Tunisia's look east policy and will analyze whether this strategic shift in Tunisia's geopolitical alignment could serve as a viable means to alleviate Tunisia's severe economic crisis.	



Tadesse Getachew Habetie – Dóra Kolta – Emese Prihoda	Bridging the Gap: Skill Mismatches and Youth Unemployment in Developing Economies: Evidence from Ethiopia
Youth unemployment is one of the major challenges facing most developing countries, and recently, skill mismatch has become a significant factor. This study looks at the mismatch between education systems and labour market demand in developing economies, particularly in Ethiopia, and how skill mismatch affects employment opportunities. The existing literature on these aspects is drawn upon to indicate deficiencies in technical, digital, and soft skills among Ethiopian youth, underpinning the effect of outdated curricula, inept vocational training, and weak industry-academia linkages. The findings bring out that, despite increasing access to education, failure to align learning outcomes with labour market requirements perpetuates youth unemployment and economic stagnation in Ethiopia. This requires an attack on many fronts: reforming the educational system, promotion of vocational training, creation of better linkages between industry and academia, and focused policy intervention to adequately equip the youth with marketable skills. The study contributes to the existing literature on workforce preparedness in developing economies and presses for urgency in closing the skill gap in order to promote sustainable employment.	
Marko Sedlak – Nemanja Josifov	The influence of local development in revitalization of border regions
The paper analyzes the influence of local development on the possibility of revitalizing border areas. This work focuses primarily on the analysis of marginal, economically underdeveloped, and economically backward border areas, based on which different types of problematic regions are distinguished. This work aims to present the possibility of implementing different concepts of local development in the revitalization of border areas. Potential solutions with the help of which it is possible to realize them are highlighted: sustainable use of natural resources, population policy measures, subsidies at the level of local self-government units in border areas, encouragement of entrepreneurship, and creation of preconditions for the implementation of sustainable development goals. They are specified with examples from practice. In addition to the proposed solutions, their sustainability and effectiveness on a long-term level were also analyzed. A special review of this work is on the importance of implementing local development, as a starting point for the regional development of the wider territory and the future nucleus of development at the state level.	



Péter Tóth – Zoltan Csizmadia – Krisztina Kóbor – Tamara Böcz	Service difficulties, internal resolution mechanisms and needs of social institutions in Hungary - the baseline of a development problem map
The study focuses on the current service/care difficulties and challenges that social institutions in Hungary are facing in their daily operations, how they can react to them with their own internal resources, mechanisms and capacities in the moment, and what concrete, tangible needs and demands are emerging in terms of methodological professional support, potential forms, interventions and direction for professional development. A total of 24 general and 55 specific service and operational problems were identified and assessed in eight different service areas (family and child welfare services, family and child welfare centres, respite care for children, care for the homeless, addiction intervention, care for people with disabilities, care for psychiatric patients, specialised care for the elderly, and basic services for the elderly). The empirical base of the study uses a database of online questionnaires completed by a professional target group working for social service providers in two counties (Győr-Moson-Sopron and Veszprém). The questionnaires were completed between November and December of 2022 which resulted in 201 personal questionnaires for analysis. The sample represents 166 social service providers in the two counties surveyed. The findings will form the basis for the development of a professional support and development problem map. Social institutions face complex and serious service/care difficulties and challenges in their daily operations. As the main result, three distinctive basic problems clearly stand out in both severity and significance from the complex set of factors assessed. The biggest problem in the social care system is clearly the complex challenge of low wages. Administrative burdens ranked second in the ranking of operational difficulties, and the third key factor was the psycho-mental workload of staff.	
Dóra Csöppös – Márta Szombathelyi Konczos	The Impact of Digitalization on City Image Formation
The aim of this study is to summarize and analyze the opportunities, findings, and results of city image-building supported by innovative digital solutions, based on a review of the relevant literature. City image formation is fundamentally an exercise in association and reputation building. The concept of image-building is closely linked to technological changes. This study examines the interrelations within the urban space through the lens of city image development, considering technological advancements and their impacts. The analysis provides a comprehensive exploration of the complex processes involved in city image development supported by innovative digital solutions, offering a broad perspective on how and to what extent digitalization	



contributes to the formation of city image.

Taking relevance aspects into account, a key focus is the integration of innovative digital solutions into city image development, as well as an examination of cities' communication methods, which can reveal important correlations. The research is based on a systematic review and synthesis of academic literature, presenting and integrating secondary data in accordance with the study's objectives. The results uncover causal relationships that provide a realistic picture of the interaction between city image formation and innovative digital solutions. The novelty of the topic lies in its multidisciplinary research approach, which broadens the perspective and opens new dimensions for the development of city images. The applicability of the research findings primarily serves as guidance for the development of both domestic and international cities.

Zoltán Bugovics	Social changes and shifts in the lifestyle in the case of the residents of scattered farmsteads in the Great Plain of Hungary
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The research focuses on the social changes and lifestyle shifts in the case of the residents of scattered farmsteads in the Great Plain of Hungary. The paper methodologically is based on in-depth interviews with residents of scattered farmsteads. The local factor and the regional aspect are both crucial in examining the details of the transformation of this settlement type, as the region of the sand ridge area of the Great Plain includes most of the scattered farmsteads.

The main features of the social changes include the references to human relationships, the generation structure and that of social groups, which subsequently affect the social structure of the once traditional society of the scattered farmsteads. The lifestyle changes reflect how this traditional way of life has been evolving into a new and transformed lifestyle in the last decades, and what societal patterns could be identified.

The results indicate that the agricultural production of the scattered farmsteads shifted from the traditional functions to new forms, like agritourism or organic farming, and in many cases, abandoning farming altogether and changing to tourism or other business activities. Yet another typical tendency is the settling of new social groups, including professionals and pensioners, who move to scattered farmsteads. Thus, the social and lifestyle changes are not simply due to economic transformation but are the consequences of the immigration of new social groups.