



Structured Abstracts of 'Startups, Entrepreneurship, and Innovation in the Digital Economy' session

Entrepreneurship education in Higher Education: Comparative Study from Hungary and Poland

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Background and introduction: This study investigates how entrepreneurship education (EE) initiatives in higher education institutions (HEIs) function as components of national and regional innovation ecosystems in Central and Eastern Europe.

Objective: With a comparative focus on Hungary and Poland, the research aims to explore university-based EE programs' governance, financing, and outcomes and their role in fostering entrepreneurial mindsets, human capital development, and sustainable innovation.

Methodology: The research employs a comparative case study methodology. It reviews relevant literature on EE trends, pedagogical approaches, and institutional models before conducting an in-depth analysis of four case studies: the Hungarian Startup University Program (HSUP), the PFR School of Pioneers, the Warsaw University of Technology's Startup Entrepreneurship course, and Aula Polska. The study triangulates policy documents, program reports, and secondary data sources to capture governance structures.

Results: The study advances knowledge by situating EE as an institutional infrastructure within national innovation strategies, highlighting governance and financing models that underpin their effectiveness. Comparing two distinct Central European approaches offers practical insights on designing, resilient and impactful EE programs. These findings also underline the societal value of university-based EE as a tool for inclusive development and sustainable community engagement across diverse regions.

Conclusions: Despite differing structures, both countries' programs contribute to strengthening entrepreneurial competencies, fostering innovation ecosystems, and shaping students' career pathways. However, challenges such as dropout rates, fragmented governance, and limited long-term impact assessment persist.

Limitations and future research directions: The study advances knowledge by situating EE as an institutional infrastructure within national innovation strategies, highlighting governance and financing models that underpin their effectiveness. Comparing two distinct Central European approaches offers practical insights for policymakers and universities on designing resilient, inclusive, and impactful entrepreneurship education programs. Future research should extend longitudinally to assess the real-life impact of EE programs on students'.

Keywords: entrepreneurship education, startup, comparative study, sustainable development, social impact, community engagement



Suppressed Innovation Dynamism: Systemic Disharmony and Zombification

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Background and introduction: The presentation addresses the underlying systemic problems behind the weakening innovation dynamism in advanced economies.

Objective: The objective is to (i) decipher the more and more asymmetric relationship between the financial sphere and the real economy resulting in anemic innovation dynamism; (ii) to show one of the most intriguing side-effects of such disharmony: the emergence and perseverance of zombie firms; and (iii) to draw important policy recommendations.

Methodology: Building a verbal model based on quantitative and qualitative data and information available at publicly accessible and authoritative international databases (World Bank, OECD etc.).

Results: One of the most basic systemic underlying process behind weakening innovation dynamism is identified. Zombification is addressed with a systems view by calling for an approach which is unique and new-fangled in the literature.

Conclusions: Zombification may be interpreted as a manifestation of self-organised criticality of modern capitalism (bias toward overproduction and overconsumption) that requires an entirely different approach to spur innovation.

Limitations and future research directions: The paper draws important lessons for how to trigger innovation while addressing zombification, which requires a totally new approach to economic growth. A more qualitative growth oriented socio-economic system is needed. Research shall focus on how that system can be cultivated.

Keywords: Suppressed Innovation Dynamism: Systemic Disharmony, Zombification and the Future of Growth

Competence Development Through Talent Support Programs in Higher Education: A Systematic Literature Review

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Background and introduction: The rapid transformation of labour market and the growing emphasis on knowledge-based economies have placed new demands on higher education institutions to not only educate but also to foster individual student talents. Although such programs are widespread, little is known about which competencies they develop, how outcomes are measured, and what factors influence them. This review synthesizes international empirical evidence on competence development in higher education talent programs.

Objective: The study aims to systematically review international empirical studies on talent support programs in higher education, focusing on their role in developing students' competencies. It identifies targeted competence areas, assessment methods, and influencing contextual factors.

Methodology: The review follows PRISMA guidelines and uses a structured search strategy across multiple open access databases (2010–2025). Studies are included if they examine higher education students in talent support programs with measurable competence outcomes. An iterative screening process is followed by thematic synthesis and conceptual mapping using tools like VOSviewer.

Results: Preliminary results indicate a wide spectrum of talent support initiatives targeting cognitive, interpersonal, and intrapersonal competence areas. Common outcome domains include creative problem-solving, collaboration, initiative, and reflective thinking. The review will explore how these competences are defined and assessed, and what program formats are most frequently associated with positive outcomes.

Conclusions: The review will offer a comprehensive overview of how talent development programs contribute to student competence building in higher education. By identifying dominant themes and methodological patterns, the study aims to inform institutional practice and future research on talent support systems.

Limitations and future research directions: This review is limited to a defined time period and open access sources, which may exclude relevant but restricted-access studies. While the review follows a structured and reproducible process, its scope inherently narrows the literature base. Future research should explore grey literature and consider empirical validation in regional higher education institutions, especially in Central and Eastern Europe.

Keywords: higher education, talent support, competence development, student development programs, systematic literature review



Developing more efficient transportation for cities with lower population density

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Background and introduction: Transportation sector contributed to the global man-made CO₂ emission by a 25% share in 2024. Without any intervention, that amount will grow to 60% by 2050, according to predictions. Road transportation is responsible for approximately 75% of the sector's emission. Given that more than half of the world's population lives in cities, many people are exposed to the two major problems namely congestion and high pollution in living areas.

Objective: This research aims at evaluating ways of transportation to provide suggestions for policymakers to develop more sustainable system in cities in the countryside. Population density only enables municipalities in Budapest to operate and maintain a dense public transport system 24/7. In the countryside, personal ways of mobility should be involved more, and the research would like to contribute to do so.

Methodology: For the theoretical framework, the authors made a systematic literature review using PRISMA method. A comprehensive analysis on Life Cycle Analysis (LCA), Green House Gas (GHG) emissions, cost analysis and adjustment to personal preferences at the same time are poorly understood. Therefore, assessment and comparison of ways of personal mobility are provided. Using a complex way of thinking, elements of sustainability, namely environmental, economic and social aspects are considered.

Results: We found that the population of cities in the countryside may even be large; however, their huge areas counterbalance it resulting in a low population density. Consequently, in cities outside Budapest, no efficient transportation system can be created and maintained without private ways of mobility. Considering LCA, production and operational costs, as well as GHG emissions, it seems that e-scooters is one of the best alternatives to provide solutions for crowd, pollution and personal needs.

Conclusions: In the future, smart cities cannot be imagined without a better developed, more sustainable transportation system. It is predictable that one of the best ways that considers all the aspects mentioned above seems to be the e-scooter, but developing a (national) network of public-owned (rentable) e-scooters should be developed.

Limitations and future research directions: Among the limitations of the study, we can mention that it remains in the field of theoretical framework and literature review, without pilot projects and practical implications. A large-scale survey on personal preferences, as well as the habits of using local infrastructure including public e-scooters would provide background for more realistic suggestions and implications.

Keywords: sustainable transportation, smart city, micromobility, e-scooter, LCA, GHG emission, congestion, active mobility