

Structured Abstracts of 'Innovations in Process Management and Sustainability - Next Generation II.' session

Sustainable Procurement in Interior Design: Corporate Challenges and Solutions

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Background and introduction: Environmental awareness is playing an increasingly significant role in every part of the world, whose key elements are sustainability and recycling process. 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.

Objective: 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.

Methodology: 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. Based on the CIT methodology, it examines procurement and supply chain management processes through practical examples, data collection, analysis and drawing conclusions. The method helps to identify specific situations that analyze the success and failure of sustainability. The application of text mining will be used to identify new trends in sustainable sourcing and consumer attitude.

Results: The findings indicate that this topic represents a research gap where supply chain management, sustainable construction and urban planning intersect.

Conclusions: Companies must confront several challenges related to new technologies and environmental awareness in order to develop or transform well-functioning supply chain management processes.

Limitations and future research directions: In future research, more relevant journals will be analyzed, as additional databases will be utilized. In this way, a broader perspective can be used to examine the topic. Furthermore, case studies and surveys will provide more information to support the current findings.

Keywords: systematic literature review, supply chain management, procurement, interior design, sustainability



Analyzing Regional Disparities in Croatia Using the Gravity Model

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Background and introduction: Regional inequality remains a persistent challenge to economic and social development, particularly in countries undergoing spatial and demographic transitions. In Croatia, disparities between regions are significantly shaped by internal migration patterns and uneven income distribution. These factors not only influence regional labor markets but also affect long-term cohesion and balanced growth.

Objective: The objective of this study is to analyze regional inequality in Croatia with a specific focus on internal migration and income distribution, employing the gravity model as the primary analytical tool. Originating from Newtonian physics, the gravity model has evolved into a widely accepted framework for examining trade flows and spatial interactions. Its adaptability and operational simplicity make it particularly suitable for modeling internal migration dynamics. The research question of this paper is: To what extent do internal migration patterns and income distribution contribute to regional inequality in Croatia, and how can these relationships be effectively analyzed using the gravity model?

Methodology: By applying the gravity model to Croatian regional data, this paper reveals clear spatial patterns in population movements and their correlation with income disparities.

Results: The results underscore the role of economic attractiveness and population size in shaping internal migration flows, further reinforcing existing inequalities between more developed urban centers and less prosperous peripheral regions.

Conclusions: The study concludes that regional inequality in Croatia is both a cause and consequence of asymmetric migration and income flows. While the gravity model proves effective in capturing these dynamics, certain limitations remain, particularly regarding data availability, the exclusion of non-economic migration drivers, and the static nature of the model.

Limitations and future research directions: Future research should consider incorporating dynamic modeling approaches, qualitative factors such as quality of life, and policy interventions to provide a more comprehensive understanding of regional development trajectories in Croatia.

Keywords: regional inequality, gravity model, Croatia



Sustainable Smart City Development: The Case of Six South Asian Cities

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Background and introduction: The diffusion of smart city initiatives faces varying challenges depending on the economic and infrastructural development of cities. This research compares six Southeast Asian cities (Singapore, Taipei, Jakarta, Kuala Lumpur, Manila, and Bangkok) to examine how levels of development influence the success of smart city projects across three key dimensions: sustainability, digitalization, and quality of life.

Objective: The first generation of smart city initiatives were mainly technological projects, while today the focus is increasingly on supporting quality of life and sustainability. Research on sustainable cities is an increasingly popular research trend, with a particular lack of knowledge on Southeast Asian cities. Therefore, this research seeks to partially fill this research gap through a case study of 6 cities.

Methodology: The research was carried out using a multiple case study methodology, with expert sampling across two developed, two moderately developed and two less developed cities.

Results: Findings indicate that highly developed cities (e.g., Singapore) have made significant progress through integrated digital strategies, such as AI-driven industrial upgrades and smart infrastructure. In contrast, less developed cities face major barriers due to inadequate utilities and limited institutional capacity. The novelty of this study lies in its contextualized approach, analyzing smart city development not in isolation but in relation to structural conditions and development levels.

Conclusions: This research offers valuable insights into how smart city models can be adapted to local contexts. It highlights the importance of tailored strategies that consider a city's institutional readiness and infrastructural baseline. These findings may support urban planners and policymakers in designing more realistic, inclusive, and effective smart city frameworks—especially in rapidly urbanizing regions with uneven development.

Limitations and future research directions: The limitation of the research is the sample selection of a few large cities in a region, which also provides an opportunity to continue the research within the framework of the study.

Keywords: quality of life, ASEAN, digitalization, digital transformation, urban development



The Digitalization Evolution in Supply Chain Management: A Systematic Literature Review and a Transformation Model Assessment

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Background and introduction: The successful evolution of digitalization is evident within many industries' supply chain management and operation. With the need for process efficiency and competitive advantage achievement, enterprises have integrated and implemented diverse technology at different levels for their supply chain to target the goal of digitalization transformation.

Objective: The research aims to investigate the development of the digitalization transformation era, the model applicability and its measurement.

Methodology: Approaching a mixed methodology, the study combines a thematic qualitative review with case study analysis and quantitative correlation analysis additional with cluster visualization.

Results: The findings of the paper highlight the significant evolution of digitalization in SCM, the primary focus on process development when building digital chains, and a navigation framework for organizations to assess their digital transformation, offering a strategic roadmap for enterprises to advance their digital supply chain performance.

Conclusions: The author has explored such evolution by conducting a systematic literature review of 284 articles from Scopus and Web of Science; proposing a transformation model with three dimensions: data management, digital integration, and supply chain decision-making, assessed through three key metrics -adoption level, readiness level, and digital maturity level.

Limitations and future research directions: One room for improvement is the need to collect a larger sample of respondents, which can help to enlarge the dataset, as it's crucial for quantitative method validation. Additionally, in the future the author can concentrate on one precise company or industry to investigate their practical situations within the author's model.

Keywords: Supply chain management, Digitalization, Transformation, Industry 4.0, Model validation

A comparative analysis of senior management and their HR decisions in an unstaffed and staffed Hungarian hotel

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Background and introduction: The topic was inspired by the author's passion for tourism, a combination of her previous and current studies. The theoretical background is provided by the decisions made by top management in HR, the importance of the existence and lack of internal and external interactions as part of tourism, and the evolution of organisational culture and its change due to the impact of technology. The research was motivated by an interest in the impact of staff on decisions, org culture and guest experience.

Objective: The aim of this thesis is to compare the management and operations of an unstaffed and a staffed Hungarian hotel through a comparative analysis of top management decisions, HR decisions and organisational culture. The paper examines staff and guest expectations and experiences and satisfaction, while identifying differences between partially or fully automated and traditionally organized hotel service.

Methodology: In addition to the literature review, the study is based on direct experiences (interviews, questionnaires and online reviews) of external (guests) and internal (management and staff) stakeholders of a hotel in Hungary, both staffed and unstaffed.

Results: The results include a focus on the essence and differences in organisational culture (not only in companies with people) and a comparative assessment of the two institutions based on the main stakeholders. Technological innovation is creating a specific hybrid service infrastructure where human intelligence meets machine solutions, creating optimally more favourable conditions and opportunities for hotel service and its guest experience.

Conclusions: Any form of contact with staff can be defined as an experience in tourism, but in the 21st century, hybrid service, the experience of technology, which is increasingly emerging in more and more areas and can replace people, can also provide a guest experience, as the use of the latest tools provides useful technical knowledge as well as autonomy and freedom. On the service side, automation means easier and more cost-effective organisation of operations, but also a very different working culture.

Limitations and future research directions: It is certainly worth extending the research to other sites, both traditional and automated, to ensure that the experience of one example can be generalised. Consideration should also be given to extending the methodology of the primary studies, i.e. qualitative analysis to interpret and evaluate the data collected. The author hopes that the profession will take note of the message of the paper that an important component of organisational success is the organisational culture.

Keywords: hotel management, personnel, technology, corporate culture, guest's experiences



The Implementation of Lean Methodology in SMEs: Exploring Its Possibilities and Impact on Profitability

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Background and introduction: Lean methodology is increasingly viewed as a vital approach for improving operational efficiency and profitability. This paper investigates the feasibility and practical outcomes of Lean implementation in small and medium-sized enterprises (SMEs), with a focus on both strategic adoption and measurable business impact.

Objective: The research aims to explore the potential of Lean methodology within SMEs and to evaluate how its implementation affects financial performance, efficiency, and organizational adaptability.

Methodology: The study involves two phases. First, a systematic literature review was conducted using the Scopus database, applying the PEO framework and PRISMA method, identifying 40 relevant studies from an initial 746. Second, primary data was collected from SME partners to assess Lean knowledge, tool usage, cultural readiness, and stakeholder commitment, followed by statistical analysis.

Results: The literature review identified diverse Lean practices adapted to SME contexts, and highlighted links to cost savings and environmental sustainability. The empirical phase aims to uncover the organizational and cultural factors influencing successful Lean implementation in SMEs.

Conclusions: This study builds foundational knowledge about how Lean can enhance SME profitability and competitiveness. The findings aim to guide SMEs in aligning Lean practices with internal capabilities and long-term goals, while offering a knowledge base for practitioners and researchers alike.

Limitations and future research directions: Limitations include the use of a single database and early-stage primary data. Future research should expand the data scope and explore industry-specific dynamics. Further studies may examine Lean's long-term financial and environmental effects across diverse SME sectors.

Keywords: SME, Lean, Productivity, Environmental sustainability

Integrating Demand-Responsive Transportation into Smart City Strategies: Implications for Sustainable Urban Mobility in the European Union – A Systematic Literature Review

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Background and introduction: Demand responsive transportation (DRT), smart mobility, and smart cities are relatively new concepts. This study aims to define DRT and its synonyms, while also describing smart city and smart mobility. It explains why DRT is particularly relevant in urban areas and explores how policies can support its effective implementation and growth.

Objective: The main goal is to examine how DRT systems can be embedded into the smart city framework to create sustainable, efficient, and user-friendly mobility solutions. It also investigates international strategies and policy directives that support the development of such transport systems across the European Union.

Methodology: The study uses a systematic literature review (SLR) supported by the PRISMA and PEO frameworks. Sources were mainly drawn from the Scopus database. The methodology enables the identification of interconnections between smart mobility, smart city development, and DRT practices.

Results: The analysis identified various definitions and synonyms for DRT. It demonstrates how DRT contributes to the smart mobility agenda and how it fits into broader smart city systems. The study found that DRT can offer more environmentally friendly, effective, and sustainable mobility solutions, supported by several innovative international initiatives.

Conclusions: The research provides a solid base for further investigation and highlights DRT as a key component of future urban mobility. It outlines the importance of DRT for companies, governments, and organizations, and offers a structured vocabulary for future academic and practical work in this domain.

Limitations and future research directions: This study is limited by its reliance on a single database (Scopus) and a specific set of keywords. Future research should include other databases and primary data collection. Deeper exploration of how DRT integrates with other smart city dimensions is also recommended for future work.

Keywords: On-demand transportation, smart city, smart mobility, European Union, sustainability, urban services, sustainable development



How Nudging Shapes Safe Driving Habits: Evidence from Generation Z Drivers

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Background and introduction: Road traffic accidents remain a leading cause of death in Hungary, indicating that conventional intervention methods (e.g. fines) have not provided sufficient improvements in promoting safe driving habits. The study investigates how nudging - a concept within the field of behavioural economics - can enhance road safety among Hungarian Generation Z drivers.

Objective: The study aims to identify that out of seven nudge types which ones can most effectively influence safe driving behaviour among Generation Z drivers in Hungary, and to explore whether nudges can be personalised, thus supporting more efficient road safety interventions. Ultimately, the aim is to contribute new insights into improving the road safety situation in Hungary.

Methodology: During the research a questionnaire survey was conducted among Hungarian Generation Z drivers, gathering 153 valid responses. The survey included seven nudge approaches, each represented by 3-4 statements, the respondents' agreement with them being assessed on Likert scales. Exploratory factor analysis was applied to identify underlying factors influencing driving habits and non-parametric tests to assess the relationship between the extracted factors and personal traits of respondents.

Results: Three key factors were extracted: comparison of behaviour explaining 25.2%, shaping knowledge 21.0%, and natural consequences 16.6% of the total variance. Furthermore, it was identified that women respond more positively to the natural consequences approach; those who do not own a car respond more positively to comparison of behaviour; and those who do not know whether their car is equipped with diagnostic devices react more positively to natural consequences.

Conclusions: The research supports that carefully constructed and implemented nudges could greatly contribute to creating a safer driving environment in Hungary. A key role may be allocated to policymakers, driving instructors and parents to support the forming of safe driving habits among young drivers. Ultimately, the results of this study may contribute to forming a better understanding of driver behaviour as well as the identification of the most appropriate nudging strategies to enhance driving habits.

Limitations and future research directions: The survey was conducted among university students in Győr in October 2024; therefore, the research is limited by the cross-sectional nature of the data. Furthermore, the survey was based on a non-representative and self-reported sample. Future research therefore should include broader age groups with representative samples. Moreover, with the rise of micromobility, exploring the effect of nudges on scooter users would also offer valuable insights into improving road safety in Hungary.

Keywords: nudging, driving behaviour, road safety, Generation Z, factor analysis



Net Zero Ambitions and the Role of SMEs: A Systematic Literature Review of EU Carbon Policy

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Background and introduction: In the context of accelerating climate change, the European Union has adopted ambitious net zero targets. Carbon pricing mechanisms, such as the Emissions Trading System (EU ETS), play a central role in emissions reduction strategies. While large corporations have been widely studied, the role of small and medium-sized enterprises (SMEs) remains underexplored.

Objective: The aim of this study is to explore the development and dynamics of the EU Emissions Trading System as a core element of EU climate policy. It examines how the system has evolved, its effectiveness in reducing emissions, its interaction with other policies, and its broader economic and environmental impacts. Particular attention is given to its influence on small and medium-sized enterprises, which are indirectly affected yet play a vital role in the EU's transition to net zero.

Methodology: This study applied a Systematic Literature Review (SLR) methodology, following the PRISMA protocol to ensure a transparent and replicable selection process. The review was conducted using the Scopus database. The PEO (Population, Exposure, Outcome) framework was used to formulate the research focus, centering on how the EU Emissions Trading System influences various stakeholders, particularly SMEs. Articles were analysed thematically to extract common patterns and insights.

Results: The findings show that the EU ETS has become increasingly effective in reducing emissions and stabilizing the carbon market, particularly after recent reforms. However, the system's complexity, administrative burden, and indirect cost pass-throughs continue to pose challenges, especially for small and medium-sized enterprises. Although SMEs are typically not directly included in the scheme, they are impacted through supply chain requirements, energy pricing, and client expectations.

Conclusions: The review highlights that while the EU ETS is central to the EU's net zero strategy, its indirect effects on SMEs must not be overlooked. For the transition to be inclusive and effective, regulatory design must take into account the diversity and constraints of smaller firms. Improved support mechanisms and better policy coordination are essential to ensure that SMEs can actively contribute to and benefit from the EU's decarbonization pathway.

Limitations and future research directions: The scope of this review is shaped by its reliance on English-language, peer-reviewed sources from the Scopus database, potentially excluding region-specific or non-academic perspectives. Future research could examine how carbon pricing mechanisms influence SME behaviour, innovation, and adaptation strategies in practice. Cross-country comparisons, firm-level studies, and sector-specific analyses could help identify enabling conditions and policies that enhance the effectiveness of the EU ETS.

Keywords: EU ETS, carbon pricing, SMEs, emissions trading, climate policy, net zero, systematic literature review

Future Gen Z leaders and building trust

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Background and introduction: In today's highly uncertain and unpredictable environment, one of the most essential leadership capabilities is the ability to manage and cultivate trust. Numerous studies have examined the factors that shape trust and acceptance toward leaders, which are vital for establishing a healthy organizational culture.

Research question: What is the opinion of higher education students, future Generation Z leaders, about the role of trust, and how do they approach building trust?

Objective: Preliminary literature reviews reveal that considerable research has been conducted on leadership and trust, however, the exploration of trust-building strategies to future Generation Z leaders remains a relatively under-researched area at the international level. There is a lack of empirical research focusing on how Generation Z leaders build and maintain trust.

Methodology: This exploratory research was conducted using a quantitative method, an online questionnaire survey among 770 higher education students in Hungary in spring 2025. Data collection was supported by the university's domestic partner institutions.

Results: The research is currently being processed, therefore the expected results of the research can be presented: Creation of practical recommendations for Higher Education and corporates. Contributing to the advancement of academic research in generational leadership and leadership development.

Conclusions: The research promotes socially impactful, value-based leadership practices that foster trust.

Limitations and future research directions: The research focused only on students attending management courses at Hungarian higher education institutions. In the future, we plan to conduct it among students studying in other programs as well as international students, in order to analyze different professions and cultural specificities.

Keywords: Gen Z leaders, leadership, building trust, Higher Education

Measuring Mental Well-being in Digitally Transforming Higher Education: A Conceptual Framework

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Background and introduction: As higher education institutions undergo rapid digital transformation, addressing the negative effects of digitalization on the mental well-being of employees has become a critical factor in sustaining resilient, inclusive, and socially responsible academic communities. However, the assessment of well-being in these contexts remains fragmented, lacking clear guidance on selecting context-sensitive and theoretically grounded assessment tools.

Objective: The aim of this study is to develop a conceptual framework for assessing the mental well-being of higher education employees in digitally transforming academic environments, and to explore how the Perceived Stress Scale (PSS) and Burnout Assessment Tool (BAT) can be conceptually adapted to reflect the psychological effects of digitalization.

Methodology: The framework is developed through a targeted literature review and theoretical synthesis, drawing on Social Support Theory and Social Cognitive Theory. The paper addresses two core questions: (1) What are the main psychological dimensions of well-being in digitally transforming higher education? (2) How can the Perceived Stress Scale (PSS) and the Burnout Assessment Tool (BAT) be conceptually adapted to measure the negative psychological effects of digitalization in higher education settings?

Results: The framework identifies four key dimensions of well-being in higher education: psychological resilience, social interactions, digital work satisfaction, and perceived institutional support. These dimensions are proposed as central protective factors influencing mental health in digital academic settings. The framework is further informed by a theoretical reinterpretation of two widely used and validated psychological instruments, the PSS and the BAT.

Conclusions: The resulting model offers scholars and institutional leaders conceptual foundations for assessing and promoting employees' mental well-being, while supporting sustainable community development in higher education in response to the challenges posed by digital transformation.

Limitations and future research directions: As a conceptual study, this research does not include empirical validation of the proposed framework. Future studies should test the adapted dimensions of the PSS and BAT through qualitative and quantitative methods across diverse academic contexts to assess their reliability and relevance in digitally transformed environments.

Keywords: mental well-being, digital transformation, higher education, sustainable community development, stress and burnout management



Pneumatic tube systems in healthcare logistics: Case Study on operational efficiency and development requirements in Hungary

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Background and introduction: The COVID-19 pandemic accelerated the growth of e-commerce, increasing the importance of fast and efficient home delivery. Last-Mile Delivery, the final step in the logistics chain, has become critical but also faces challenges in both urban and rural areas. One potential solution is the use of pneumatic tube systems, already implemented in some countries for specific purposes. This investigation focuses on examining the operation of a pneumatic tube system in a Hungarian hospital.

Objective: The aim of the publication is to examine how pneumatic tube systems can contribute to enhancing the efficiency of Last-Mile Delivery, with a particular focus on Hungarian healthcare institutions. The objective is to identify potential areas for development and explore broader applications of these systems beyond their current use.

Methodology: The research focused on a pneumatic tube system operating within a Hungarian healthcare institution. Data was collected through a questionnaire-based survey and with in-depth interviews, targeting users of the system. The survey explored user experiences, expectations, and suggestions for improvement.

Results: The results of the questionnaire indicate that while pneumatic tube systems offer several advantages, there are also various areas that require improvement. Respondents emphasized the importance of speed and reliability, and highlighted the need for technical modernization. The feedback suggests that beyond the healthcare sector, pneumatic tube technology may have potential applications in other logistics fields as well.

Conclusions: Pneumatic tube systems represent a viable alternative for addressing increased Last-Mile Delivery demands, especially in closed or specialized environments such as healthcare institutions. The research demonstrated that, with appropriate development and adaptation, these systems could be extended beyond their traditional use and applied in new logistical contexts.

Limitations and future research directions: The study is limited by its focus on a single healthcare institution, but a similar system is used in several healthcare institutions in Hungary. Extension to other databases and more reliable data from healthcare institutions in different regions could provide a comprehensive picture.

Keywords: pneumatic tube system, supply chain, healthcare logistics