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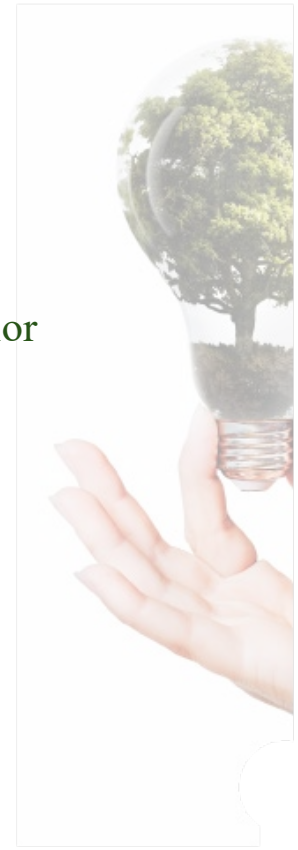
Quality, Innovation and Sustainability



Abstract Book

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Editors: Federica Murmura

Laura Bravi

Giada Pierli

Fabio Musso

Gilberto Santos

Editors

Federica Murmura

Laura Bravi

Giada Pierli

Fabio Musso

Gilberto Santos

Carlo Bo University of Urbino, Italy

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Preface

ICQIS2025 was the sixth edition of the International Conference on Quality, Innovation and Sustainability, proudly coordinated by the International Scientific, Advisory and Organizing Committees. This year, the conference took place in the charming city of Urbino, Italy — a UNESCO World Heritage Site renowned for its cultural legacy and academic tradition.

Originally launched in northern Portugal, the ICQIS conference series has continued to expand, establishing itself as a vibrant platform for international exchange. In 2025, the event once again offered an opportunity for scholars, researchers, professionals, and practitioners to present cutting-edge contributions and engage in rich discussions on quality, innovation, and sustainability across the domains of engineering, business, and societal transformation.

The 2025 edition brought together one hundred and forty-four authors from fourteen countries, reflecting the global relevance and growing impact of the conference. The diversity of topics discussed — ranging from digital transformation and circular economy to lean management, sustainable tourism, Industry 5.0, human-centric innovation, and inclusive leadership — highlights the interdisciplinary nature of the event and the shared commitment to building more sustainable and resilient systems.

A key highlight of ICQIS2025 was the participation of three outstanding keynote speakers. Professor Rodrigo Lozano, affiliated with TU Dresden, Vienna University of Economics and Business, and the Central University of Technology in South Africa, delivered an insightful presentation on tools, initiatives, and approaches for sustainability in organizations, emphasizing the integration of sustainable practices into organizational strategies.

Professor Maria Francesca Renzi, Full Professor at Roma Tre University and President of the Italian Association of Commodity Science (AISME), offered a forward-looking lecture on the digital transformation and its social impacts in the agri-food sector. Her talk explored emerging trends and the evolving intersection between technological innovation, sustainability, and societal well-being.

Lastly, Professor Jiju Antony, Vice President of Research at the International Academy for Quality, discussed the application of Lean Six Sigma in higher education, addressing challenges, benefits, tools, techniques, and providing examples of successful projects.

The Organizing Committee is deeply grateful to all participants, authors, and reviewers for their invaluable contributions. Every paper presented offered a chance to explore innovative research questions, modelling approaches, case studies, and critical perspectives. We also sincerely thank the members of the International Scientific Committee and Advisory Committee for their dedication and efforts, which helped ensure the quality and relevance of the conference content.

ICQIS2025 was a forum not only for presenting results, but also for nurturing collaboration, strengthening academic and professional networks, and envisioning new paths for sustainable innovation.

We look forward to welcoming all of you again at ICQIS2026.

Chair of ICQIS 2025

Prof. Federica Murmura

Urbino (Italy), June 2025

Track A

The Supermarket of the Future - A Digital Exhibition and Multisensory Shopping Experience

Guenther Botschen[1], Mathias Streicher[1]

[1]Department of Management and Marketing, University of Innsbruck, Austria

Contact Person: Guenther Botschen **E-mail:** guenther.botschen@uibk.ac.at; www. Retail-lab.at

Abstract

In this paper, the authors present the development of a prototypical design of the supermarket of the future, termed "A Digital Exhibition and Multisensory Shopping Experience", combining the best of both worlds, that is, the multi-sensorial experience of the offline with the access, interactivity and convenience of the digitalized off and online. The converging physical and virtual retail spaces create new and modified touchpoint experiences which attract existing and potential customers and stimulate digital and brick and mortar shopping at the same time.

Seeking a thorough identification and understanding of crucial elements and factettes for the design of the supermarket of the future, the authors conduct a literature review overlaying findings from relevant consumer behaviour studies, to uncover existing and potential expectations concerning future off- and online food shopping.

An interdiscplinary team of experts translates the identified pool of expectations into the design of a first version of the supermarket of the future. Based on Hevner's design science research approach the final prototype becomes developed during various design cycles continuously proofing its practical applicability.

The preliminary design combines a 24/7 hours Hi-Tech Digital Exhibition Store, a huge type of easy accessible digital vending machine, with a modern version of a modern multisensory market place. Figure 1 shows a drawing of the first prototypical version of Supermarket of the Future, integrating the two spaces. All details of the hybrid supermarket of the future will be presented at the conference.

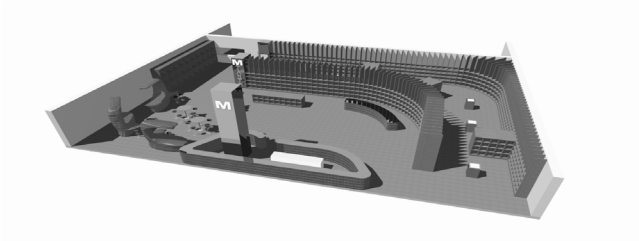

Figure 1. Prototypical version of the two worlds of the Supermarket of the Future

KEYWORDS: Store of the Future, Design Science Research, Brick and Mortar Digitalization, Future Shopping Behaviour, Touch-point Experiences

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Assessment of Educational Services Provided by Higher Education Institutions in the Age of E-Learning

Manuela Ingaldi[1], Joanna Rosak-Szyrocka[1]

[1]Department of Production Engineering and Safety, Czestochowa University of Technology, Poland

Contact Person: Ingaldi Manuela **E-mail:** manuela.ingaldi@pcz.pl

Abstract

Several years ago, many European universities were hesitant to embrace online education, expressing concerns about the adequacy of their tools and the effectiveness of this teaching format. However, the challenges posed by the COVID-19 pandemic demonstrated that such apprehensions were largely unfounded, as higher education institutions successfully transitioned to e-learning systems with minimal disruptions. A wide range of tools and applications available on the market facilitated this shift, proving the adaptability of online education. E-learning represents a significant educational innovation as it enables flexible, accessible, and scalable learning opportunities, making quality education available to diverse populations and fostering lifelong learning in an increasingly digital world. This article aims to evaluate selected academic programs at a Polish university, focusing on the effectiveness of e-learning. The evaluation was conducted based on survey data collected from students enrolled in the analyzed programs. The research employed the Importance-Performance Analysis (IPA) methodology, with results presented through graphical representations and descriptive statistics. The findings allowed for the identification of key strengths and weaknesses of e-learning-based instruction. Identified weaknesses provided insights into potential areas for improvement and informed recommendations for enhancing the quality of online education. The methodology and outcomes of this study may serve as a reference framework for similar evaluations at other higher education institutions.

KEYWORDS: Service Quality, E-learning, Importance-Performance Analysis (IPA), Educational Innovation

Innovative Changes in The Work Environment towards Nomadic Travel Trend

Ivana Šaffová[1], Daniela Matušíková[1], Tünde Dzurov Vargová[1]

[1]Department of Tourism and Hotel Management, Faculty of Management and Business, University of Prešov, Slovakia

Contact Person: Ivana Šaffová **E-mail:** ivana.saffova@smail.unipo.sk

Abstract

Given the rapidly changing trends in society and the significant impact caused by the Covid-19 pandemic, it is possible to observe the consequences of changes in the work environment. While standard ways of performing work in the past required a physical presence at the place of work, in recent years there have been more significant changes that have shaped a new way an alternative of performing work in the form of so-called nomadic travel. The paper deals with the perception of nomadic travel as an alternative way of doing work. Analytically, through questionnaire research and evaluation of its results, it identifies the attitude towards its benefits as well as the barriers to its practice. The results point to the fact that this alternative is becoming aware, and respondents perceive its benefits. Among the most significant barriers to nomadic travel, even in view of the current circumstances, security conditions and the political situation can be highlighted.

KEYWORDS: Working Environment, Nomadic Travel, Impact of Covid-19, Digital Nomads

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The Impact of Agriculture 4.0 on Women's Well-being: Insights from Thematic Clusters in Research

Atifa Amin[1], Veronica Ungaro[1], Federica Bisceglia[1], Laura Pietro[1], Roberta Guglielmetti Mugion[1], Maria Francesca Renzi[1]

[1]Department of Business Studies, Roma Tre University, Italy

Contact Person: Atifa Amin **E-mail:** atifa.amin@uniroma3.it

Abstract

On the European level, the agriculture sector remains male-dominated, with only about 30% of farms across the EU managed by women. The European Union (EU) Rural Pact, the Agri-Food Pact for Skills, and the Common Agricultural Policy (CAP) have inspired a surge in agricultural 4.0 research, and the role of women in this field has arisen as a subfield of sustainable agriculture. To evaluate the present state of the literature, this article utilizes the Scopus database without any time constraints. This resulted in the inclusion of 88 articles in the sample. Nine thematic clusters were identified through bibliographic coupling analysis through the VOSviewer (software). 88 Scopus-indexed documents were examined and manually analyzed. Clusters are identified as 1) women's empowerment in sustainable development, 2) gendered barriers in climate-smart agriculture adoption, 3) smart agriculture in developing countries and women's well-being, 4) labour-saving technologies and digital tools and gender-responsiveness 5) gender-sensitive policies and practices, 6) gender-sensitive climate-smart agriculture 7) inclusive agriculture system 8) Gender-transformative approach 9) women's economic empowerment and resilience to climate change. The scientometric analyses reveal key concepts, top research themes, and the evolution of the research field over time. With the insights as a foundation, this article closes with a proposed agenda for further research.

KEYWORDS: Agriculture 4.0, Climate-Smart Agriculture, Gendered Barriers, Women Empowerment

Innovation Ecosystem and University System: The Framework Proposal for SMEs by the Grant Office Service of the University of Foggia

Cristina Di Letizia[1], Luca Grilli[1], Alfredo Ernesto Di Noia[1]

[1]Department of Economics, Management and Territory, Università di Foggia, Italy

Contact Person: Cristina Di Letizia **E-mail:** cristina.diletizia@unifg.it

Abstract

This paper presents a framework for diagnosing Small and Medium-sized Enterprises (SMEs) within the innovation ecosystem fostered by the Grant Office Service of the University of Foggia (GOS-Unifg). Building upon best practices and experience gained by GOS-Unifg and similar frameworks used within the Italian university system, this proposed framework utilizes three questionnaires: assessment of industrial property, propensity for investment and Artificial Intelligence adoption, and managerial performance related to SME innovation capability.

The framework identifies key indicators and managerial aspects of innovation, culminating in a composite coefficient of SME innovation propensity. This diagnostic tool can be used to evaluate an SME's potential for participation in the GOS-Unifg innovation ecosystem. The resulting diagnosis informs the development of tailored managerial tools, including recommendations, company policies, managerial objectives and strategies, and training and capacity-building initiatives.

This approach represents the foundation for a qualitative-quantitative Observatory leveraging advanced data analysis tools (e.g., artificial intelligence, machine learning) to develop predictive analyses. These analyses aim to optimize the effectiveness and efficiency of the implemented managerial tools. Future research will expand the framework to include an initial company scouting phase and a final phase focused on fostering long-term engagement within the innovation ecosystem. Further research will also involve testing the framework and determining appropriate weightings for the identified managerial aspects and related tools.

KEYWORDS: Innovation Ecosystem, University Grant Office, Innovation Services, SME Innovation Capability, Innovation Management

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Adoption of Lean Manufacturing in Italian Mechanical Engineering Industry: Impacts on Sustainability and Barriers to Implementation

Giada Pierli[1], Federica Murmura[1], Laura Bravi[1]

[1]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy

Contact Person: Giada Pierli **E-mail:** giada.pierli@uniurb.it

Abstract

This study explores the adoption of Lean Manufacturing within the Italian mechanical engineering industry, aiming to assess awareness, adoption levels, perceptions, and impacts on sustainability, while also analyzing the challenges faced by non-adopters. A survey was conducted among 115 Italian companies to evaluate their implementation of Lean practices and its effects on the economic, environmental, and social pillars of sustainability. Descriptive statistical analysis was employed to synthesize the findings.

Results reveal that only 16.5% of the surveyed companies have adopted Lean practices, reporting significant benefits, including enhanced productivity, operational efficiency, and resource utilization. Lean adopters also highlight improvements in employee satisfaction, health and safety, and waste reduction, demonstrating alignment with sustainability objectives. Conversely, non-adopters face critical barriers such as time constraints, insufficient knowledge, and resistance to change, which are particularly pronounced in micro and small enterprises. Despite these challenges, many non-adopters recognize Lean as a valuable opportunity, underscoring the potential for broader implementation through targeted support.

The study emphasizes the importance of customized interventions, such as training programs and institutional support, to facilitate the adoption of Lean practices and overcome barriers. It also confirms that Lean Manufacturing, when effectively implemented, serves as a strategic enabler for sustainability by fostering operational, environmental, and social improvements.

By offering insights into both adopting and non-adopting companies, this research contributes to the understanding of Lean Manufacturing's role in advancing sustainability within the mechanical engineering sector, providing actionable recommendations for practitioners and policymakers.

KEYWORDS: Lean Manufacturing, Sustainability, Lean Tools, Lean Adoption, Mechanical Engineering Industry

Track B

On Slow Tourism: Exploring an Advancement in Protected Areas Tourism - Great Basin National Park – USA

Ikrame Selkani[1]

[1]CESINE International Business School. Santander, Spain; AUS: American Institute of Applied Sciences, Switzerland

Contact Person: Ikrame Selkani **E-mail:** ikrame.selkani@gmail.com

Abstract

An approach of tourism which manages to minimize the negative impacts and enhances positive ones on basis of social, economic, environmental aspects. Generates greater economic benefits for local people and enhances the wellbeing of host communities. A continuous process.

By advancing the social demographic background into the present era, slow tourism has a unique identity that provides a more sustainable, humanistic, eco-friendly tourism product to both hosts and visitors, while sharing the anti-mass-tourist goals of the new tourism model (Conway and Timms, 2010).

The purpose of this paper is to clarify via an example the link between the purposes of the slow tourism in the protected areas; that is to say, to identify an internal action plan that applies in protected areas.

Heitmann and colleagues (2011) define slow tourism as "the delight of exploring, learning, and sharing." A trip that is "slowed down" enables deeper connections and interactions with locals and their destinations.

After the qualitative research: guide interview with National Park Manager, we understood that slow tourism is being relevant and important for the present situation of the PA and especially for the future of maintaining the balance between: flora, fauna and humans (visiting tourists).

Great Basin National Park is an American National Park in White Pine County, in the east of central Nevada, near Utah border. Established in 1986, the park is named after the Great Basin, a dry and mountainous region between the Sierra Nevada, with a surface area of 312 km².

The main questions of this paper are: within natural and protected areas such as parks, slow tourism may well be applied; here, we will study the case of Great Basin national Park USA, and we will figure out how these areas are operated by the slow tourism.

KEYWORDS: Slow Tourism, Protected Area, Great Basin National Park, USA

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Strategic Transformation for ESG Integration: Aligning Corporate Culture and Overcoming Barriers

Fátima Carneiro[1,2], Maria Serôdio[1], Henriqueta Nóvoa[1], André Carvalho[3,4]

[1]Department of Industrial Engineering and Management, Faculty of Engineering, University of Porto, Portugal
[2]Kaizen Institute Western Europe, Matosinhos, Portugal
[3]Department of Mechanical and Industrial Engineering, NOVA School of Science and Technology, Universidade NOVA de Lisboa, Caparica, Portugal
[4]Laboratório Associado de Sistemas Inteligentes, Guimarães, Portugal

Contact Person: Fátima Carneiro **E-mail:** anafatima.carneiro@gmail.com

Abstract

The growing emphasis on Environmental, Social, and Governance (ESG) principles highlights their critical role in addressing global challenges such as climate change, social inequality, and corporate transparency. While ESG frameworks hold significant potential for sustainable value creation and corporate responsibility, their practical implementation remains challenging due to data inconsistencies, technological limitations, regulatory compliance issues, and organizational resistance to change. Despite extensive literature on ESG integration, a knowledge gap persists in identifying effective strategies to align corporate sustainability culture with ESG objectives.

This study examines the alignment of sustainability culture with ESG principles through an in-depth case study of a pulp and paper company at the forefront of process transformation and digitalization. It aims to identify key barriers to ESG implementation—including cultural, structural, and technological factors—and propose actionable strategies to overcome them. Using a mixed-methods approach, the study integrates continuous improvement methodologies with ESG principles to develop tailored solutions.

The findings contribute to both academic and practical discourse by addressing critical implementation gaps and providing a roadmap for organizations navigating ESG complexities. Key insights include strategies for fostering leadership commitment, overcoming technological limitations, enhancing data standardization and governance, improving stakeholder engagement, addressing industry-specific challenges, and embedding ESG principles into operational frameworks. By bridging theory and practice, this research offers a comprehensive framework for achieving sustainable, long-term alignment with ESG objectives

KEYWORDS: Environmental, Social, and Governance (ESG), Sustainability Culture, Continuous Improvement, Digital Transformation, Corporate Responsibility

Enhancing Workforce Sustainability in the Healthcare Sector: Aspects and Challenges

Veronika Škerháková[1], Viktória Ali Taha[1]

[1]Department of Management, Faculty of Management and Business, University of Prešov, Slovakia

Contact Person: Veronika Škerháková **E-mail:** veronika.skerhakova@unipo.sk

Abstract

The healthcare sector today confronts significant issues, including brain drain, insufficient funding, changing work habits due to a new generation of employees, and poor working conditions for new employees. All of these elements are essential to the sustainability of the workforce in this vast, yet fragile, sector. The sustainability of the healthcare workforce poses a significant challenge, mostly to the state, as the whole healthcare system and ultimately the patient depend on its efficacy. The aim of this paper is to define the challenges that employers in the healthcare sector are facing and to explore potential aspects that will help increase the sustainability of the healthcare workforce.

KEYWORDS: Healthcare, Sustainability, Workforce

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Uncovering Employability Skills for Circular Food Systems: A Big Data Approach

Francesco Smaldone[1], Stefania Supino[2], Daniela Sica[2], Benedetta Esposito[2]

[1]Department of Economic and Business Science, G. Marconi University of Rome, Italy
[2]Department of Human Sciences for the Promotion of the Quality of Life, San Raffaele University Rome, Italy

Contact Person: Stefania Supino **E-mail:** stefania.supino@uniroma5.it

Abstract

The transition towards a circular economy (CE) necessitates a profound reconfiguration of job roles and skills to align with principles of resource efficiency and waste reduction. Among all sectors, the food industry (FI) emerges as a critical focus for this transformation, given its dual role as a major contributor to environmental challenges and a key enabler of sustainable development. The agri-food sector accounts for a substantial share of global resource consumption and waste generation and directly impacts food security and public health. Consequently, advancing circular practices within the FI is pivotal to achieving broader sustainability goals.

This transformation demands a workforce equipped with specialized skills to innovate, implement, and manage circular strategies across the food supply chain. Despite the sector's significance, prior research has primarily addressed CE skills or those related to the agri-food sector in isolation, embracing the whole supply chain. However, according to prior research, no study has jointly analyzed the specific skills required by the FI to drive its circular transition.

Accordingly, this research seeks to address a critical gap in the existing literature, employing advanced text mining and topic modelling techniques to analyze job advertisements extracted via web scraping from global employment platforms. A big data approach was adopted due to the complex nature of the data involved in the study and consequent profiling techniques.

The analysis identifies key hard and soft skills employers demand, categorizing them into thematic areas that reflect the unique requirements of CE roles. Hard skills emphasize knowledge of waste management, resource efficiency, and circular design, while soft skills highlight adaptability, interdisciplinary collaboration, and systems thinking. Furthermore, the study uncovers correlations among skills, revealing clusters critical for operationalizing circular principles in food production and processing. This includes the linkage between systems thinking and resource efficiency, which is vital for implementing sustainable practices.

The findings contribute to a deeper understanding of the evolving skillset necessary to address the circular transition in the FI. This study aims to reduce skill mismatches and support the emergence of a resilient and sustainable food system by bridging the gap between labour market needs and educational curricula.

KEYWORDS: Circular Economy, Agri-Food Industry, Employability, Skills, Text Mining, Topic Modelling

The Application of Visual Semiotics for the Promotion of Natural Tourism Destinations: An Exploratory Study

Luca Olivari[1], Guido Capanna Piscè[2]

[1]Department of Tourism and Geography, University of Rovira i Virgili, Tarragona, Spain
[2]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy

Contact Person: Luca Olivari **E-mail:** luca.olivari@estudiants.urv.cat

Abstract

This study employs visual semiotic methodology to decode the logos of Spanish natural parks certified under the European Charter for Sustainable Tourism (ECST). By breaking down the logos into their fundamental visual elements, the research identifies the visual codes and corresponding attributes that constitute these logos. The study further explores the potential meanings these visual attributes could convey to the public, aiming to understand how they help promote natural tourism destinations. The analysis focuses on 29 ECST-certified Spanish natural parks, examining their logos to determine common visual themes and messaging strategies. The findings provide valuable insights for park administrations, graphic designers, and communication agencies in designing effective visual identities that align with sustainable tourism goals. This research contributes to the growing body of literature on applied semiotics in tourism destination promotion, offering a novel approach to understanding the visual communication strategies of natural parks.

KEYWORDS: Applied Semiotics, Natural Parks, Tourism Destination Promotion, European Character for Sustainable Tourism, Logo Analysis

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Track C

Modeling Maintenance Strategies Based on Dynamic Methodologies

Suzana Lampreia[1], Valter Vairinhos[1], Teresa Morgado[1,2,3], Victor Lobo[4]

[1]Portuguese Naval Academy & CINAV, Alfeite-Almada, Portugal
[2]Instituto Superior de Engenharia de Lisboa, Lisboa, Portugal
[3]UNIDEMI, NOVA School of Science and Technology, Universidade NOVA de Lisboa, Portugal
[4] NOVA IMS, Universidade NOVA de Lisboa, Portugal

Contact Person: Suzana Lampreia **E-mail:** suzanalampreia@marinha.pt

Abstract

Maintenance plays a crucial role in ensuring the availability and high performance of ships. Various techniques have been developed to enhance equipment reliability while minimizing life cycle costs. This study proposes the integration of continuous condition monitoring into Failure Mode, Effects, and Criticality Analysis (FMECA) to optimize maintenance prioritization. Additionally, parallel analyses of other equipment will be conducted to assess the feasibility of performing their maintenance simultaneously, leveraging maintenance opportunities in a dynamic concept. Focusing on an internal combustion engine, the condition monitoring parameters considered include vibration, thermography, temperature, maintenance records, and component wear state. The primary objective is to demonstrate that integrating condition monitoring with FMECA can improve maintenance efficiency, ultimately contributing to a more sustainable ship life cycle.

KEYWORDS: Maintenance, Condition Control, FMECA, Dynamic

Consumer Materialism and Compulsive Buying in E-Commerce: Insights from Eye-Tracking Research

Ivana Ondrijová[1]

[1]Department of Managerial Psychology, Faculty of Management and Business, University of Prešov, Slovakia

Contact Person: Ivana Ondrijová **E-mail:** ivana.ondrijova@unipo.sk

Abstract

This paper explores the theoretical foundations of consumer materialism and compulsive consumption in the context of online shopping, utilizing eye-tracking technology as a neuromarketing tool. The study aims to provide a comprehensive review of existing research in this domain, identifying key factors that influence consumer behavior in online shopping environments. Materialism and compulsive buying are two well-established psychological constructs that have been extensively studied in traditional retail settings. The study of materialism and compulsive consumption contributes to the search for solutions for reducing excessive consumption and its negative impact on the environment. The increasing digitalization of commerce necessitates a deeper understanding of how these constructs manifest in electronic shopping. Eye-tracking technology offers an innovative methodological approach to examining consumer decision-making processes, visual attention distribution, and cognitive load during online purchases. This study systematically reviews previous empirical findings, focusing on how materialistic tendencies and compulsive buying behaviors are expressed through gaze patterns, fixation durations, and visual engagement with product displays, pricing information, and persuasive marketing cues. The paper outlines methodological recommendations for future studies aiming to explore the intersection of materialism, compulsivity, and online shopping behavior using eye-tracking techniques. The conclusions drawn from this study contribute to a better understanding of digital consumerism and offer practical implications for marketers, researchers, and policymakers seeking to develop strategies that promote responsible consumption in online retail environments.

KEYWORDS: Consumer Behavior, Materialism, Compulsive Buying, Eyetracking

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Lean as a Promoter of Efficiency and Productivity in the Mould Industry: Review

Armando Bastos[1], João Matias[2], José Carlos Sá[3,4], Mário Pereira[5]

[1]DEGEIT/UA - Department of Economics, Management, Industrial Engineering and Tourism, Campus Universitário de Santiago, University of Aveiro, Portugal
[2]GOVCOPP, Department of Economics, Management, Industrial Engineering and Tourism (DEGEIT), Campus Universitário de Santiago, University of Aveiro, Portugal
[3]CIDEM, ISEP - School of Engineering, Polytechnic of Porto, Portugal
[4]LAETA - Associated Laboratory for Energy, Transports and Aeronautics, Campus da FEUP, Portugal
[5]CDRSP/ESTG - Centre for Rapid and Sustainable Product Development /School of Technology and Management of Polytechnic University of Leiria, Portugal

Contact Person: Mário Pereira; Armando Bastos **E-mail:** mario.pereira@ipleiria.pt; armando.bastos@ua.pt

Abstract

As a result of the competitiveness that companies face in an increasingly global world, increase efficiency and productivity has been a growing concern for companies, regardless of the scenarios they have experienced over time, but even more so in turbulent times such as those we are witnessing today. To cope with the pressure to reduce lead times for their orders and constantly reduce prices for instance, companies seek to implement solutions that allow them to guarantee competitiveness rates that allow them to be sustainable. In this sense, Lean Manufacturing continues to gain prominence as a response to the growing demand for increased efficiency, quality and reduced lead times that customers impose on companies, with the aim of increasing their competitiveness. Despite the many recognized benefits of its application, several challenges must be overcome to ensure its implementation over time. This philosophy is recognized such a philosophy as a promoter of company efficiency, as well as a promoter of company efficiency. And consequently, a promoter as well of the cultural context of companies. This study was carried out based on a systematic review of the literature, using the Scopus database. The PRISMA process was used to select the final articles. Finally, to analyse and discuss the results, a bibliometric analysis of the articles was performed, and the content was analysed. The results indicate that this philosophy application effectively promote increases in the efficiency of companies and, consequently, an increase in productivity. The elimination of waste, and, consequently, the reduction of activities that do not add value to products and services, such as the reduction of excessive stocks, waiting times, unnecessary movements and overproduction, result in more efficient processes. The DMAIC analysis (Define, Measure, Analyse, Improve and Control), as a continuous improvement framework, allows the systematic identification of opportunities for improvement and the implementation of improvements that guarantee the sustainability of companies. By prioritizing the variables “Conformity”, “Productivity” and “Competitiveness”, companies address resources to these points like the most impactful points in organizations. In this way, they promote significant improvements in the efficiency and productivity of their processes. Based on data resulting from this guidance, the basis for strategic decisions becomes more evident, and the alignment of operations with clients’ requirements becomes effective.

KEYWORDS: Lean, Mould, PRISMA Method, Efficiency, Productivity

The Impact of the Internationalization Process of Multinational Companies (MNCs) through Foreign Direct Investments (FDIs) on US Output: An Analytical Approach Using Vector Auto-regressive Analysis

Anis BENABED[1], Matteo Bondesan[2]

[1]Faculty of International Economic Relations, Bucharest University of Economic Studies, Romania
[2]University of Turin and Collegio Carlo Alberto, Italy

Contact Person: Anis BENABED **E-mail:** anis_anisse@yahoo.fr

Abstract

This paper analyses the macroeconomic impact of multinational companies' foreign direct investments (FDIs) on US GDP through the lens of a Vector Autoregressive (VAR) model. The results show that our tractable VAR model estimates that FDIs affect US real GDP and attract subsequent FDI flows, highlighting the material role of the establishment of foreign multinational companies (MNCs) for business internationalization. Changes in the Fed Funds rate directly affect FDIs and, subsequently, real GDP. MNCs' internationalization processes increase business values in both domestic and host economies; however, companies should focus on their ownership, location compatibility, and internalization possibilities before engaging with FDIs in the US. In conclusion, quality negotiations with stakeholders, efficient contraction terms, budget considerations, and risk mitigation measures should be considered for MNCs' resilience, particularly for those coming from weak economies.

KEYWORDS: Business Internationalization, Multinational Companies (MNCs), Foreign Direct Investments (FDIs), Business Values, Globalization, Vector Autoregressive (VAR) Modelling

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Decoding the Importance of Marketing for Companies' Brands and Business Internationalization in Globalization: An Analytical Approach

Anis BENABED[1]

[1]Faculty of International Economic Relations, Bucharest University of Economic Studies, Romania

Contact Person: Anis BENABED **E-mail:** anis_anisse@yahoo.fr

Abstract

This paper and research present, analyze and decode the importance and relevance of marketing for companies' brands and business internationalization process, the paper presents and analyzes the importance of brands, the power of marketing and customer values for companies and business holders that are engaged or would like to get involved in the business internationalization process. Companies and business holders that would like to operate in foreign markets through the internationalization process have to focus on the power of their brands and ownerships using the powerful concept of marketing but they have to break its codes wherever and whenever they use it. Companies often face significant challenges when they expand internationally, such as understanding local consumer preferences and adapting product offerings and marketing messages. However, internationalization also offers companies the opportunity to enter new markets, diversify their revenue streams, and gain a competitive advantage. Effective marketing strategies enable companies to capitalize on these opportunities by identifying target markets, conducting market research, and developing tailored advertising campaigns. Marketing has to analyze global ideas for international markets because it is very important for companies' local and international business perspectives within or before engaging in the business internationalization process.

KEYWORDS: Business Internationalization, Globalization, Marketing, Brand, Process, Insight, Decoding

Track D

Cross-border Shopping in Cross-Border and Online Areas: The Italian Case

Monika Staffieri[1], Laura Bravi[1], Fabio Musso[1], Giada Pierli[1], Federica Murmura[1], Gilberto Santos[2]

[1]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy
[2]School of Design, Campos do IPCA, Barcelos, Portugal

Contact Person: Laura Bravi **E-mail:** laura.bravi@uniurb.it

Abstract

Cross-border shopping is an increasingly widespread phenomenon, which involves crossing national borders to buy products/use services abroad. This practice has become a daily activity, especially for consumers who live in border areas.
The study of cross-border shopping began in the mid-90s, focusing on the areas of North America, China-Hong Kong and Europe. In most cases, outshopping satisfies the needs of consumers, bringing mainly economic benefits, but this practise is also often accompanied by travel, gastronomy, and vacation activities. To facilitate understanding the aspects of cross-border shopping, an analysis of the most interesting cases found in the West was carried out.
Among the studied cases, a few examples can be mentioned: the Mexico-USA case, which shows how Mexican cross-shoppers usually spend an average of three nights away when they go to the USA to shop and the Germany-Dutch Bank case, which highlights how market exchanges and customer loyalty depend on transnational, social and economic exchange mechanisms and the Croatia-Serbia case, which focuses on the influence of psychological factors on consumer purchasing behavior (helping behavior, ethnocentrism and perceived quality of products. Other cases of relevance analysed in the study are those of Germany and Switzerland and Poland and Ukraine.
Following these studies, the empirical research conducted on the Italian case is presented. Two methods of cross-border shopping are specified: in physical mode in the cross-border areas of Northern Italy and on the border with San Marino, and in online mode, reserved for consumers who live in the areas of central and southern Italy. As a research methodology, the online questionnaire was used, customized according to the area of residence; it investigated economic and psychological aspects, through semi-structured questions.
After an initial part aimed at collecting demographic data, it proceeded to analyse consumer behavior: cross-shoppers in physical mode usually cross the border to buy clothing, personal care products and food and the main destinations are San Marino, Italy and Switzerland; cross-shoppers in online mode mainly buy clothing, electronics and personal care products from Asian and European websites.
With reference to the economic and psychological motivations analysed, it is evident that people who practice cross-border shopping have more confused ideas than those who practice it in online mode, at least on an economic level. On the psychological level, however, the results underline how the economic patriotism of Italians is superficial and limited to morality, which declines when the possibility of saving arises.

KEYWORDS: Cross-border Shopping, Benefits, Italy, Consumer Behavior, Economic Patriotism

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Barriers of Implementing Environmental Innovations in Tourism Companies

Tünde Dzurov Vargová[1], Daniela Matušíková[1], Ivana Šaffová[1]

[1]Department of Tourism and Hotel Management, Faculty of Management and Business, University of Prešov, Slovakia

Contact Person: Daniela Matušíková **E-mail:** daniela.matusikova@unipo.sk

Abstract

To reduce the burden on the environment as well as to limit environmental damage and negative impacts, tourism companies have been increasingly addressing the issue of implementing environmental innovations in their operations. The paper focuses on identifying barriers to applying these innovations in practice, using the example of tourism businesses providing accommodation services. Through questionnaire research and subsequent data evaluation using selected statistical methods, it approximates their attitude towards the issue. The results indicate that tourism business management requires a much more pronounced application of green management principles for a sustainable industry of the future.

KEYWORDS: Tourism Innovations, Environmental Innovations, Ecological Initiatives

Enhancing HR Practices Through Neuroscience: The Evolution and Impact of Neuromanagement

Nella Svetozarovová[1], Jana Cocuľová[1], Ľuba Tomčíková[1]

[1]Department of Management, Faculty of Management and Business, University of Prešov, Slovakia

Contact Person: Nella Svetozarovová **E-mail:** nella.svetozarovova@unipo.sk

Abstract

In recent years, neuromanagement has become an important tool in the field of human resource management, using insights from neuroscience to optimize HR practices, improve employee performance and identify and retain talent. The paper examines the importance and application of neuroscience in human resource management and explores how neuromanagement tools can contribute to more effective organizations. The aim of the paper is to provide theoretical perspectives and analysis of research studies in the field of neuromanagement and its application in different areas of HRM. The paper highlights the potential of neuromanagement as a tool to promote innovation in HRM and underlines the need to integrate these technologies into everyday HR practices to create more productive and healthier work environments. By bridging the gap between empirical neuroscience findings and practical HR strategies, neuromanagement can inform more personalized training methods, enhance leadership development, and strengthen decision-making processes. This holistic approach encourages a deeper understanding of cognitive, emotional, and behavioral dynamics within workplace settings, fostering environments that support employee well-being while driving organizational success.

KEYWORDS: Neuromanagement, Human Resource Management, Neuroscience, Innovation

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The Role of Innovative Startups in Advancing Low-Carbon Practices in Museums, Heritage, and Cultural Tourism Sites

Martha Friel[1], Angelo Miglietta[1], Vittorio Ottaviani[1]

[1]Department of Humanities, IULM University, Milan, Italy

Contact Person: Martha Friel **E-mail:** martha.friel@iulm.it

Abstract

This paper examines startups' role in driving the cultural sector's decarbonisation, focusing on museums and heritage sites in Italy. As cultural institutions face pressure to align with sustainability goals, they see both the necessity and opportunity in adopting sustainable practices, which can attract new audiences and secure sustainability-focused funding. As in other sectors, startups are playing a key role in providing technological solutions tailored to the needs of cultural institutions. The paper aims to map collaborations between startups and cultural institutions, highlighting successful business models and identifying barriers to broader adoption.

The study adopted a multi-phase approach focused on the Italian context to meet the research objectives. The first phase involved mapping innovative startups active in the cultural sector, resulting in a database of 300 startups. Data on each startup, including name, sector, location, revenue, and services, were collected from official startup databases. Preliminary interviews with innovation, culture, and sustainability experts provided further insights. The second phase involved qualitatively analysing selected startups and examining their business models, technologies, and decarbonisation strategies. Semi-structured interviews with startup founders and managers explored innovation processes, implementation challenges, and integration expectations for cultural institutions.

Preliminary findings highlight that while startups are contributing to decarbonisation through innovations such as the reuse of exhibition materials, energy management via renewable sources, and optimising visitor flows using big data, the adoption of these solutions is often restricted by rigid regulations governing the cultural sector and the limited availability of funding for investment in new technologies. Despite these challenges, some startups have successfully implemented adaptable solutions across different sectors, with scalability proving critical for widespread implementation.

The research concludes that while startups have significant potential to support decarbonisation in the cultural sector, overcoming regulatory and financial obstacles will require more flexible policies and stronger public-private partnerships. Future research will explore effective collaboration models and refine strategies to enhance the scalability of sustainable solutions within the broader cultural sector context.

KEYWORDS: Startups, Innovation, Cultural Sector, Museums, Decarbonisation

Nurturing Creativity in Luxury Niche Perfumery: How Art and Culture Foster Innovation

Annalisa Sentuti[1], Francesca Maria Cesaroni[1]

[1]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy

Contact Person: Annalisa Sentuti **E-mail:** annalisa.sentuti@uniurb.it

Abstract

According to the latest Cognitive Market Research data, the luxury niche perfumery industry will reach globally USD 4,084.41 million by 2029 with an annual growth rate of 11.29% from 2023 to 2030. In this sector, creative entrepreneurship plays a pivotal role in shaping innovation and market differentiation by combining high quality, craftsmanship and uniqueness. Unlike mass-market perfumery, luxury niche firms concentrate only on crafting limited quantities of specific fragrances and emphasize the finest quality raw materials, aesthetics, specific sales channels, and sensory experiences, creating a fertile ground especially for young entrepreneurs to pursue new market opportunities by developing new business models. This paper explores how young entrepreneurs leverage on their creativity to establish and grow businesses in the luxury niche perfumery industry. The research employs a qualitative approach and draws from a case study of the emblematic experience of a young Italian entrepreneur and his small firm. Findings reveal that creative entrepreneurship in luxury niche perfumery can thrive on a business model that (1) intersects art, culture and innovation to market differentiation and (2) makes extensive use of the opportunities offered by new technologies to engage with the customers. The entrepreneur has built a strong, firm identity around narrative concepts inspired by local heritage, historical expression and folk tales. All the fragrances are developed with an internationally renowned 'nose', leaving full creative freedom to interpret the story in olfactory terms. They are experimental olfactory compositions that tell of moments and places linked to stories. Design and packaging are designed to create a visual link between the product and the artistic, historical and cultural heritage it narrates. Leveraging digital tools, e-commerce and content creators, the firm is able to reach global audiences and grow rapidly. This study contributes to the discussion on creative entrepreneurship by demonstrating how art and culture can inspire innovative and successful business models in a niche market.

KEYWORDS: Creative Entrepreneurship, Niche Perfumery, Young Entrepreneurs, Innovation, Business Model

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Track E

Urban Mining in Europe: Exploring the Recovery Potential of Critical Elements for Battery Manufacturing

Stefania Massari[1], Marcello Ruberti[1]

[1]Department of Economic Sciences, University of Salento, Italy

Contact Person: Marcello Ruberti **E-mail:** marcello.ruberti@unisalento.it

Abstract

Urban Mining (UM) has emerged as a critical strategy to address the dual challenges of resource scarcity and environmental sustainability. In an era where traditional mining is increasingly unsustainable, UM redefines urban waste as a viable source of critical raw materials (CRMs). This paper focuses on quantifying the recovery potential of key elements such as lithium, cobalt, and nickel for battery manufacturing within Europe, leveraging data on batteries placed on the EU market and the waste generated. CRMs are indispensable to technological and manufacturing industries, but their availability is geographically concentrated, posing economic and geopolitical risks, particularly for European nations dependent on imports. By recovering CRMs from urban waste streams, UM not only reduces dependency on primary resources but also enhances the security of supply chains, supporting a circular economy. This study employs a data-driven approach to evaluate the stock of recoverable materials in waste streams and assesses the environmental and economic benefits of integrating UM into the battery production value chain. The findings demonstrate an encouraging availability of recoverable elements, capable of meeting a substantial portion of Europe's demand for battery manufacturing. This could reduce environmental degradation, minimizing resource dependence, contributing to the EU's broader sustainability goals, and ensuring a resilient and sustainable transition to green energy. The implications underscore the importance of policy support, technological innovation, and public-private collaboration to scale these efforts effectively.

KEYWORDS: Urban Mining, Critical Raw Materials, Battery Manufacturing, Circular Economy, Europe

Implementing Sustainable Development Goals in Lithium Mining: Strategies for a Greener Future

Marcello Ruberti[1]

[1]Department of Economic Sciences, University of Salento, Italy

Contact Person: Marcello Ruberti **E-mail:** marcello.ruberti@unisalento.it

Abstract

The global transition to clean energy technologies has significantly increased the demand for lithium, a critical component in battery production, and has intensified concerns regarding the environmental impact of its extraction. Leading lithium mining companies are increasingly aligning their sustainability strategies with the United Nations Sustainable Development Goals (SDGs) to mitigate their ecological footprint and promote responsible resource management. This study examines the implementation of key SDGs – particularly SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 15 (Life on Land) – across major lithium mining operations worldwide. Through an analysis of corporate sustainability reports (CSRs), the paper highlights best practices and emerging innovations in sustainable lithium extraction. Companies such as Albemarle, SQM, and Talison Lithium have adopted renewable energy integration, water recycling technologies, and biodiversity conservation initiatives to reduce their environmental impact. The adoption of Direct Lithium Extraction (DLE) and closed-loop water systems demonstrates significant potential in minimizing freshwater consumption and enhancing resource efficiency. Additionally, collaborative efforts between mining companies, governments, and local communities play a crucial role in ensuring fair and sustainable lithium supply chains. This research underscores the need for continued technological innovation, stricter environmental regulations, and industry-wide sustainability commitments to achieve a truly responsible lithium supply chain. By integrating SDG-oriented strategies, lithium mining companies can contribute to a sustainable energy transition while reducing the adverse environmental consequences of resource extraction.

KEYWORDS: Lithium Mining, Sustainable Development Goals, Environmental Sustainability, Green Extraction Technologies, Responsible Mining

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Analyzing the Logos of Natural Tourism Destinations Through Visual Semiotics: The Case of ECST-Certified Natural Parks

Luca Olivari[1], Guido Capanna Piscè[2]

[1]Department of Tourism and Geography, University of Rovira i Virgili, Tarragona, Spain
[2]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy

Contact Person: Luca Olivari **E-mail:** luca.olivari@estudiants.urv.cat

Abstract

This study expands previous semiotic research on natural tourism destinations by examining the visual identity of Italian natural parks that hold the European Charter for Sustainable Tourism (ECST) certification. Utilizing the visual semiotic methodology previously applied for the study of Spanish ECST parks, this research extends the analysis to Italian ECST-certified natural parks, as together these two nations account for 78% of all ECST-certified parks. The study aims to decode the visual elements that compose the parks' logos, by determining the basic visual codes of said logos, the visual attributes that correspond to each code, and lastly the possible meanings that those visual attributes could convey to the public. All the 48 Italian ECTS certified parks were considered in the research. The results confirm the efficiency of semiotic methodology in codifying the visual elements of logos and provide a detailed semiotic database that can be used by graphic designers and advertising agencies to design the visual identities of natural parks and other natural tourism destinations focused on promoting sustainable practices.

KEYWORDS: Logo Analysis, Natural Parks, Applied Semiotic, Tourism Destination Promotion, European Character for Sustainable Tourism

Supporting the Circular Transition: A Dynamic Model for Local Supply Chains

Raffaella Taddeo[1], Enrico Vagnoni[2], Rosa Di Capua[3], Alberto Simboli[1], Valentino Tascione[1], Andrea Raggi[1], Alessandra Piga[2], Sara Bortolu[2], Pietro Alexander Renzulli[3], Bruno Notarnicola[3]

[1]Department of Economic Studies, University "G. d'Annunzio" of Chieti-Pescara, Italy
[2]National Research Council – Institute of BioEconomy, Sassari, Italy
[3]Ionian Department of Law, Economics and Environment, University of Bari Aldo Moro, Italy

Contact Person: Raffaella Taddeo **E-mail:** r.taddeo@unich.it

Abstract

The concept of "circular transition", which has been spreading widely in recent years, summarizes the current need to move towards more sustainable economic systems. Circular Economy, in fact, results in a systemic transformation that involve all the actors of the supply chains, operating at different levels (i. e. in the production, use/consumption and end-of-life stages), with the aim of maintening the value of material and energy in the technosphere as long as possible, while reducing environmental impacts in terms of resource deplation and pollution. This implies that Circular Economy will progressively establish itself as a new socio-technical paradigm. It is well known that paradigmatic jumps require an "adaptation" phase of the systems involved, from both a structural-morphological and functional-operational point of view. Such phase requires a greater collaboration and partnerships among businesses, governments, civil society and the support of scientific frameworks and methodologies capable of representing and measuring new phenomena also for a decision-making perspective. However, the circular transition considered on a global scale, is bringing out difficulties related to the operational complexity, geographical disparities, supply chains traceability, impacts related to transport activities, which make fully circular principles and solutions less applicable. In this sense, local-scale systems have a greater potential of revaluation. The present article presents the methodological outcomes of the MAX-SHEEP research project, that inspired to the principles of Industrial Ecology, aims to support circular paths of development or redevelopment for local supply chains through a dynamic model -including the integrated use of innovative methods, tools and applied solutions- capable of promoting synergic interactions and collaborative management of materials, resources and energy flows among the circular supply chains and the territories involved.

KEYWORDS: Circular Economy, Industrial Ecology, Local supply chains, Dynamic Modeling

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Bridging the Intention-Behaviour Gap in Sustainable Tourism: A Sociological and Managerial Perspective

Luca Giraldi[1], Guido Capanna Piscè[2], Dario Peirone[1]

[1]Department of Law, University of Turin, Italy
[2]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy

Contact Person: Luca Giraldi **E-mail:** luca.giraldi@unito.it

Abstract

This study addresses the intention-behaviour gap in sustainable tourism, mainly focusing on hotel buffet food waste. What sets this study apart is its novel approach, which combines sociological and managerial perspectives to understand and address this complex issue. Using a mixed-method design, we tested the effectiveness of cognitive and hedonic messaging through a survey experiment (N=450) and a field experiment (N=1,200) at a Mediterranean hotel. The survey experiment showed that belief-based messaging significantly increased intentions to reduce food waste (M=5.2 vs. control M=4.1, $p<0.01$). However, neither cognitive nor hedonic messages significantly reduced actual plate waste in the field experiment (89-91g/guest vs. 90g control, $p=0.78$).
The study's findings, analysed using Social Practice Theory and the Attitude-Behaviour-Context Model, reveal the pivotal roles of buffets' material design and prevailing social norms in shaping behaviours, often overpowering individual intentions. The results suggest that practical changes, like using smaller plates and offering pre-portioned servings, are more effective than awareness campaigns in reducing food waste and providing actionable strategies for sustainable tourism and environmental management.
The study underscores the need for a paradigm shift from individual-focused psychological models to sociological frameworks considering broader material and social contexts. This shift towards context-driven strategies can bridge the gap between environmental intentions and actual sustainable practices in the tourism sector, inspiring and motivating change.

KEYWORDS: Sustainable Tourism Management, Behavioural Interventions, Systemic Redesign, Operational Efficiency, Food Waste

The Perception of Corporate Social Responsibility among Millennials and Gen Z

Guido Capanna Piscè[1], Luca Olivari[2], Enrico Ubiali[3], Alessandro Bonifazi[4]

[1]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy
[2]Department of Tourism and Geography, University of Rovira i Virgili, Tarragona, Spain
[3]Department of Literature, Philosophy, Communication, University of Bergamo; Italy
[4]Department of Geopolitics and Geoconomics of Infrastructures, University of Nicolò Cusano, Italy

Contact Person: Guido Capanna Piscè **E-mail:** guido.capannapisce@uniurb.it

Abstract

Corporate Social Responsibility (CSR) is increasingly recognized as an essential element in business strategies, particularly for engaging socially conscious consumers like Millennials and Generation Z, as there is an ever-growing demand from this generational cohort for transparency and ethical practices from organizations. The objective of this paper is to determine the perception of CSR among Millennials and Gen Z. To achieve this objective, the study employs a quantitative approach through the case study of the Rimini Social Club, a network of businesses and entities based in Rimini, Italy, utilizing a 5-point Likert scale quantitative survey. The survey both had a generic section on CSR with the aim of investigating the level of knowledge and importance that the sample attributes to socially responsible activities carried out by business companies and a specific section on the Rimini Social Club, which aimed to explore the knowledge, perception, and interest of respondents regarding the Rimini network. Key findings suggest that respondents support CSR practices and would be willing to pay a higher price for products from companies that support local culture and products, environmental protection, and the local community.

KEYWORDS: Communication, Corporate Social Responsibility, Ethical Business Practices, Consumer Perception

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Track F

Real-Time Sustainable Impact: Integrating Value Stream and Life Cycle Assessment in a Model Factory

Chad Matthew Laux[1], Heather Liddell[2], Nathan Hartman[3], Seyi Ogunmodede[1], Sai Ashish Karanam[3], Savani Prabhune[2], Samuel Stencel[3], Ben Haley[4], Satyaswaroop Nanda[5]

[1]Department of Computer and Information Technology, University of Purdue, USA
[2]School of Mechanical Engineering, University of Purdue, USA
[3]Hartman School of Engineering Technology, University of Purdue, USA; Indiana Manufacturing Competitiveness Center (IN-MAC), USA
[4]School of Engineering Technology; Indiana Manufacturing Competitiveness Center (IN-MAC), University of Purdue, USA
[5]Edwardson School of Industrial Engineering, University of Purdue, USA

Contact Person: Chad Matthew Laux **E-mail:** claux@purdue.edu

Abstract

Assessment of the three pillars of sustainability (people, planet, profit) is typically done separately and incompletely in a modern manufacturing environment, with a clear emphasis on the third "p": profit. Environmental life cycle assessment (LCA) and Lean manufacturing, specifically value stream mapping (VSM), offer tools for more holistic sustainability assessment, but these techniques are not yet well connected to each other. Furthermore, neither technique has been optimized to fully take advantage of now-ubiquitous smart manufacturing technologies. A modern Industry 4.0 factory provides data thread capabilities to capture and store data at nearly every stage of production, and these capabilities have not been sufficiently contemplated in LCA or Lean frameworks. This paper describes a real-time assessment model for integrating Lean Sustainability and LCA within an Industry 4.0 testbed located at the Indiana Manufacturing Competitiveness Center (IN-MaC) at Purdue University. This model is designed to produce holistic assessments at feature, product, process, and supply chain levels. Using an oil pump (produced in a simulated supply chain) as a representative product scenario, we provide an industry-relevant case study for a hybrid VSM/LCA model that integrates with a multi-modal digital production environment. This framework can help practitioners to identify new, cost-effective opportunities to improve their triple bottom line (TBL) without sacrificing progress towards established business goals.

KEYWORDS: Lean, Value Stream Map, Life Cycle Analysis, Industry 4.0, Sustainability

Using a Multi-PRISMA Model to Perform a Literature Review on Social, Environmental, and Food Safety Certifications Disclosure in Agri-Food Companies

Tiziana De Cristofaro[1], Lolita Liberatore[1] ,Valerio Luciani[1], Stefania Vignini[2]

[1]Department of Economic Studies, University G. d'Annunzio of Chieti-Pescara, Italy
[2]Department of Management, University of Bologna, Italy

Contact Person: Lolita Liberatore **E-mail:** lolita.liberatore@unich.it

Abstract

The need for a global sustainable and equitable food system increasingly requires agri-food companies to adopt quality management systems. In a context where increasing importance is attached to corporate communication, both sustainability-oriented and sector-specific certifications are quality tools that together trigger the expected benefits through suitable disclosure. The investigation of these complex linkages involves so many thematic aspects that a proper balance between rigour and flexibility during the literature search is required. Hence, through a case of preliminary review of existing studies tailored on a research project examining the three-focused topic of disclosure (D - 1st focus) of social, environmental and food safety certifications (SEFSC - 2nd focus) in agri-food (A - 3rd focus), this methodological paper aims to propose an ideal path used to define the relevant literature of multi-focused studies. Based on the "pair of thematic foci" guiding idea, our systematic review process slightly modified the one-slot PRISMA sampling to test a "multi-PRISMA" flowchart. Subsequently, by thematically analyzing the sample (85 articles) according to the number and type (D, SEFSC, and A) of foci addressed, the most (i.e., A&D) and least (i.e., D&SEFSC&A) explored research areas of the investigated topic were detected. Interestingly, very few studies address the intersection of all three foci. Furthermore, the proposed path allowed selecting the relevant research branch of the wider research project. By offering a case of performing LRs on multi-focused topics, the study enriches the literature on conducting literature reviews in social sciences while calling for methodological flexibility in interdisciplinary research.

KEYWORDS: Literature Reviews, Disclosure, Social and Environmental Certifications, Food Safety Certifications, Agri-Food

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The Emergence of Formal Clusters in the Space Sector: An Explorative Case Study

Roberta Bocconcelli[1], Susan Falleri[1], Alessandro Pagano[1]

[1]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy

Contact Person: Alessandro Pagano **E-mail:** alessandro.pagano@uniurb.it

Abstract

The space economy has grown in recent years and it has spurred the interest of governments, international institutions and firms, including large multinational firms, small firms and startups. Being competitive in the space economy is increasingly complex as firms are supposed to be innovative and capable of managing high degrees of uncertainty. Becoming a key player thus requires the ability to engage in collaborative relationships with other firms and knowledge providers, such as formal clustering, which is a recognized cooperative arrangement in the aerospace sector. This task is highly difficult for SMEs, particularly for those based in the "innovation periphery", which might lack organisational and technological resources. Therefore this paper aims to explore the set up process of formal clusters in the aerospace sector, with a main focus on SMEs' involvement and on peripheral contexts. To achieve this goal this paper examines the case study of the formal cluster Exploore, whose establishment has been completed in 2024 after a set up process started in 2021. Exploore includes firms belonging to various sectors and are based in the Marche region, which could be considered peripheral when compared to the historical regional hubs in the aerospace sector such as Lombardia, Lazio and Puglia. The development process of Exploore is examined through the Actor-Resource-Activity framework as proposed by the Business Network perspective. Preliminary results show that the Cluster has been setup through the orchestration effort of a few leading SMEs – already in the space value chain – in cooperation with a social network of Regional Government officials and experts/scientists active in Universities, Research Centres and large firms. Most of the participating actors have been involved in initial discussions and activities concerning the launch of joint projects in innovation management and marketing, whose competences are in great demand for competing in the Space Economy.

KEYWORDS: Clusters, Innovation, Peripheral Regions, SMEs, Space Economy

Sustainability Implications of Reverse Logistics for Perishable Food Products

Ilenia Bravo[1], Sara Toniolo[2], Ilenia Colamatteo[1], Paola Geatti[3]

[1]Department of Economics and Law, University of Cassino and Southern Lazio, Italy
[2]Department of Management, University of Verona, Italy
[3]Department of Economics and Statistics (DIES), University of Udine, Italy

Contact Person: Ilenia Bravo; Sara Toniolo **E-mail:** ilenia.bravo@unicas.it; sara.toniolo@univr.it

Abstract

According to EU Regulation 2019/633, agri-food supply chains based on fair practices are essential to for sustainable production. In addition to economic and social implications, unfair trading practices can have repercussions on both product quality and the environment, especially in terms of consumption of resources and energy.

In this study we analyze the hot spots and the relationships among the different stages of the agri-food supply chain through a life cycle perspective.

It emerges that potential unfair practices can affect both market competitiveness and environmental impacts. The main issue regards unsold food products which result in a loss of income for the producers. Furthermore, they are associated with the massive use of fertilizers as well as the consequent generation of emissions.

This semi-structured analysis is composed of a series of interviews conducted with the producers and a literature review.

This research addresses consumers, to guarantee a better understanding of the agri-food supply chain and its distribution. It is directed to all the supply chain stakeholders to encourage the application of the best practices to reduce environmental pressure and operate more sustainably.

The research on this aspect is still in a first stage, further studies are needed to benchmark the variables that influence the level of impact generated by these practices, to ensure fairness and justice along the agri-food supply chain. Therefore, further investigation will be conducted in the future, especially on the role of investments and communication.

KEYWORDS: Food Loss and Waste, Unfair Trading Practices, Agri-Food, Life Cycle Thinking

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Designing Sustainable Labels for Green Food Choices: An Exploratory Analysis on Eco-Score Acceptability among Italian Gen Z Consumers

Gianluigi Gallenti[1], Barbara Campisi[1], Eugenia Lazzarin[1], Matteo Carzedda[1]

[1]Department of Economics, Business, Mathematics and Statistics, University of Trieste, Italy

Contact Person: Barbara Campisi **E-mail:** campisi@units.it

Abstract

The environmental labelling of food products is progressively developing to redirect consumption and production choices towards more sustainable diets.
In this context, a new front-of-package label, the Eco-Score, has recently been developed to provide information on the environmental impact of the food product, described by a scale associated with a traffic light color design, like the Nutri-Score label (De Bauw et al. 2021).
Studies on the impact of Eco-Score on consumer behaviour and choice are still limited, and results are not homogeneous (De-loyde et al., 2022; Sengstschmid et al., 2011).
The present study investigates the acceptability and influence of Eco-Score among students at the University of Trieste, a group of young adults with a medium-high level of education and an expected high attention to environmental issues, typical of Gen Z.
The survey, conducted on the basis of a self-fulfilled anonymous questionnaire, received 243 responses in the first phase (May-October 2024) and is still ongoing.
The main results highlight that a) price, nutritional information and origin remain the most important choice dimensions, albeit with some gender differences; b) there is a high level of respondents' attention to environmental issues but a low awareness of the impact of the food system and livestock farming; c) an easy interpretation of Eco-Score is perceived, but this has a limited influence on food choice; d) there is a clear preference for certification schemes supported by public bodies; e) a low correlation exists between education level and sustainability choices.
Despite the various limitations mainly due to the respondent sample, the results suggest: a) the adoption of public regulation of the Eco-Score to reduce information asymmetry; b) the combination of Eco-Score and Nutri-Score information; c) the adoption of public subsidies for small producers and educational initiatives for consumers.

KEYWORDS: Environmental Food Label, Eco-Score, Gen Z, Meat Consumption, Sustainable Diets

Track G

Edge Intelligence and IoMT for Real-Time Healthcare Analytics: A Systematic Literature Review

Sara Marques[1], João Reis[1,2,3,4]

[1]Higher Institute of Management and Administration of Santarém, ISLA-Santarém, Portugal
[2]Industrial Engineering and Management, Faculty of Engineering, Lusófona University, Portugal
[3]RCM2+ Research Centre for Asset Management and Systems Engineering, Lusófona University, Portugal
[4]Research Unit on Governance, Competitiveness and Public Policies (GOVCOPP), Aveiro University, Campus Universitário de Santiago, Portugal

Contact Person: João Reis **E-mail:** joao.reis@islasantarem.pt

Abstract

The integration of Edge Intelligence and the Internet of Medical Things (IoMT) has emerged as an ideal approach to real-time healthcare analytics. IoMT devices, such as wearable sensors and connected medical equipment, have generated large volumes of real-time health data that are significantly enhancing patient care. However, the processing and analysis of such data require solutions that address the challenges of latency and privacy concerns. Edge Intelligence, which involves processing data at or near the source of generation, provides a promising solution by enabling faster data processing and reducing the dependency on centralized cloud systems. This article provides a systematic literature review, which explores the synergy between Edge Intelligence and IoMT in enabling real-time healthcare analytics. By using edge computing, healthcare systems are gaining immediate knowledge from patient data that facilitates quicker decision-making and more personalized treatment. Additionally, this review highlights the advantages of reducing latency and enhancing data privacy through distributed processing at the edge. It also discusses the challenges involved, including the need for robust security measures, data synchronization, and seamless integration across heterogeneous devices and systems. Ultimately, this review sheds light on the potential of Edge Intelligence and IoMT in revolutionizing healthcare by improving the efficiency, responsiveness, and quality of care, while also addressing key technical and ethical concerns associated with real-time healthcare analytics.

KEYWORDS: Edge Intelligence, IoMT, Real-time Healthcare Analytics, Healthcare Systems Integration, Edge Computing

Design of Cutting and Welding Equipment of Bioplastic Films

David E.C. Pinto[1], Raul D.S.G. Campilho[1], José C.I. Barbosa[2], Filipe M.F.M. Lopes[2]

[1]CIDEM, ISEP – School of Engineering, Polytechnic of Porto, Portugal
[2]INEGI – Pólo FEUP, Porto, Portugal

Contact Person: Raul D.S.G. Campilho **E-mail:** raulcampilho@gmail.com

Abstract

Plastics are an essential part of modern life and are used in a wide variety of applications and industries. In the packaging industry they have become dominant, and the trend is for their use to continue to increase. However, their disposable nature means that they are abandoned in the environment, leading to a series of harmful environmental consequences. To mitigate this problem, the Sustainable Plastics project, financed by European funds, has developed compounds incorporating biodegradable polymeric materials, which are intended to replace conventional plastics and be inserted into existing production chains. This work aims to design equipment to test the hot knife cutting and welding process in these compounds, identified as the greatest technical difficulty in incorporating them into the infrastructure used to produce fruit and vegetable bags typically found in supermarkets. This equipment will be developed following the Design Science Research (DSR) methodology and should be highly configurable, capable of recreating conditions in a real production environment and working with the rolls of biodegradable compound supplied for testing, having unwinding and winding functions. The entire mechanical design of the equipment was developed and the main electrical and control components that make it up were selected. All the objectives initially proposed for this work were met.

KEYWORDS: Mechanical Design, Packaging, Biodegradable Plastics, Hot Knife Welding, Hot Knife Sealing

Educating for a Greener Future: Vosviewer Analysis of Carbon Emission Reduction in Universities

Joanna Rosak-Szyrocka[1], Manuela Ingaldi[1]

[1]Department of Production Engineering and Safety, Czestochowa University of Technology, Poland

Contact Person: Joanna Rosak-Szyrocka **E-mail:** joanna.rosak-szyrocka@wz.pcz.pl

Abstract

Manuscript provides a complete bibliometric overview of carbon emission mitigation efforts in universities, spanning a period from 2002 to 2025. Innovative trends, major themes, and methodologies in this area are investigated in this study with the analysis of 1,168 articles through the Scopus database. With using Vosviewer analysis, this manuscript detects the main fields of interest, main authors, and global networks which are characterizing the landscape on sustainability in higher education. Thus the novelty of this manuscript reflects exploring in-depth bibliometric analysis of carbon emission reduction in universities which we believe is not explored yet. Although there is considerable literature on sustainability practices in higher education, this review is the first to take a broad data-driven approach to the academic literature. The results of this study show a solid increasing interest of universities on sustainability topics depicting the most prominent themes of research in energy efficiency, renewable energy integration and carbon-neutral campus initiatives, providing the global operation research networks, including developed countries, and the future directions in addressing sustainability. This analysis, as it maps out the intellectual terrain, sheds light on current trends and gaps in the literature, thus providing insights for those involved in promoting environmental responsibility in universities, including educators, researchers, and policymakers.

KEYWORDS: Green Campus, Carbon Emission, Sustainability, Wosviewer

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Mechanical Metamaterials for Sustainability: Innovative Structures for Resource Efficiency

Miguel Silva[1], Mário Pereira[1], José Carlos Sá[2,3], Teresa Morgado[4,5,6,7]

[1] CDRSP/ESTG - Centre for Rapid and Sustainable Product Development; School of Technology and Management of Polytechnic University of Leiria, Portugal
[2] CIDEM, ISEP - School of Engineering, Polytechnic of Porto, Portugal
[3] LAETA - Associated Laboratory for Energy, Transports and Aeronautics, Campus da FEUP, Porto, Portugal
[4] DEM-ISEL, Department of Mechanical Engineering of Engineering School of Lisbon, Portugal
[5] UnIRE - Unit for Innovation and Research in Engineering, Polytechnic University of Lisbon, Portugal
[6]UNIDEMI – Research & Development Unit for Mechanical and Industrial Engineering, Department of Mechanical and Industrial Engineering, NOVA School of Science and Technology, Universidade Nova de Lisboa, Caparica, Portugal
[7]CINAV – Naval Research Center, Alamada, Portugal

Contact Person: Mário Pereira **E-mail:** mario.pereira@ipleiria.pt

Abstract

Mechanical metamaterials have emerged as an innovative class of engineered materials with tailored properties that transcend those of conventional materials. Their design, often inspired by natural structures and optimized through computational methods, allows for unprecedented control over mechanical behavior, including lightweight, high-strength configurations, energy absorption, and reconfigurability. These characteristics offer significant potential for advancing sustainability in various industries. By minimizing material consumption through optimized architectures, mechanical metamaterials contribute to resource efficiency and waste reduction. Their application in lightweight structural components for transportation can lower energy consumption and CO_2 emissions. Furthermore, metamaterials designed for energy harvesting, thermal insulation, and vibration damping enhance the efficiency of renewable energy systems and sustainable infrastructure. The integration of recyclable, biodegradable, or self-healing materials in metamaterial design further aligns with circular economy principles. The main objective of this study is to assess the relationship between mechanical metamaterials and sustainability in its various pillars, which are social, economic and environmental. The main conclusion of this study is that the intersection of mechanical metamaterials and sustainability, highlighting key strategies for enhancing material efficiency, prolongs product lifespan, and reducing environmental impact. By leveraging computational design and advanced manufacturing techniques, mechanical metamaterials offer transformative solutions for a more sustainable future.

KEYWORDS: Mechanical Metamaterials, Sustainability, Lightweight Structures, Circular Economy, Advanced Manufacturing

Sustainability of Light Alloys: Assessing the Environmental Impact of Aluminum and Titanium

Daniela Neves[1], Teresa Morgado[1,2,3,4], Mário Pereira[5], Suzana Lampreia[4,6]

[1]DEM-ISEL, Department of Mechanical Engineering of Engineering School of Lisbon, Portugal
[2]UnIRE - Unit for Innovation and Research in Engineering, Polytechnic University of Lisbon, Portugal
[3]UNIDEMI – Research & Development Unit for Mechanical and Industrial Engineering, Department of Mechanical and Industrial Engineering, NOVA School of Science and Technology, Universidade Nova de Lisboa, Caparica, Portugal
[4]CINAV – Naval Research Center, Alamada, Portugal
[5]CDRSP/ESTG - Centre for Rapid and Sustainable Product Development & School of Technology and Management of Polytechnic University of Leiria, Portugal
[6]Portuguese Naval Academy, Alfeite, Almada, Portugal

Contact Person: Daniela Neves **E-mail:** A51342@alunos.isel.pt

Abstract

The engineering challenges to answer to the demands of the market involve developing new materials, particularly metallic materials, and new technologies that will drive technological advances and keep up with industrialization and urbanization. However, it is crucial to address their sustainability. Global metal use is increasing, and it is expected that metal production will grow exponentially in the coming decades. This also results in increasing concerns about resource availability, the social impacts of extraction on local communities, environmental burdens and benefits, and economic aspects associated with their production, processing, transportation and recycling. The fact that the design of a metal alloy involves reduced pollutant emissions and low consumption of natural resources may reduce the initial environmental impact, but this does not, in itself, guarantee its long-term sustainability. The true sustainability of an alloy depends on factors such as durability, recyclability, impact during use and end of life. Thus, a sustainable approach requires a critical analysis of the complete life cycle of the material in question (LCA - Life Cycle Assessment), which takes into account not only the impacts of mineral extraction and processing but also the impact of the products during use and at the end of its useful life.

KEYWORDS: Sustainability, Metals Alloys, Recycling

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Track H

Application of Lean Philosophy and TRIZ Methodology to Improve Storage Processes in the Warehouse of an Integrated Logistics Company

Helena Navas[1,2,3], Ana Dias[4,5], Teresa Morgado[1,2,4,5,6], Pedro Batista[3], Pedro Marques[7], Vítor Anes[4,5], António Abreu[4,5], João Calado[4,5]

[1]UNIDEMI – Research & Development Unit for Mechanical and Industrial Engineering, NOVA School of Science and Technology, Universidade Nova de Lisboa, Caparica, Portugal
[2]LASI, Intelligent Systems Associate Laboratory, Universidade do Minho, Portugal
[3]Department of Mechanical and Industrial Engineering, NOVA School of Science and Technology, Universidade Nova de Lisboa, Caparica, Portugal
[4]UnIRE - Unit for Innovation and Research in Engineering, Polytechnic University of Lisbon, Portugal
[5]DEM-ISEL, Department of Mechanical Engineering of Engineering School of Lisbon, Portugal
[6]CINAV – Naval Research Center, Alamada, Portugal
[7]Lusófona University, RCM2+, Lisboa, Portugal

Contact Person: Teresa Morgado **E-mail:** tmorgado@dem.isel.ipl.pt

Abstract

Market competition is increasingly high, and customer demands are more diversified, forcing organizations to adopt innovative practices and methodologies to eliminate waste from a continuous improvement point of view without decreasing productivity and quality levels. The main goal of this study is the development of a framework based on principles of continuous improvement, combining both Lean and TRIZ methodologies. The conceptual framework was applied and validated in a study for process improvement in the reception and dispatch areas of a warehouse in an integrated logistics Portuguese company. Firstly, a detailed analysis of the initial status of the area and processes was conducted through direct observation, brainstorming and a questionnaire survey. Using Pareto and Ishikawa diagrams, it was possible to screen and determine the causes of the identified problems. In the stage of diagnosis and analysis, 5S methodology was applied to identify waste sources. TRIZ methodologies were applied, as well as Matrix of Contradictions and SU-Field Analysis, which, along with techniques associated with Lean, led to the proposal of improvement actions. In conclusion, there was a system improvement of more than 15%, verified through a 5S audit. The implementation of the framework allowed the company to improve the processes that take place in the studied area, making them more fluid and organized by proposing changes in layout and activities. With this study, it is expected that the hourly load capacity in the warehouse will increase by 68% in the short term.

KEYWORDS: Continuous Improvement, Lean, TRIZ, 5S, Problem-solving

Lean Leadership: A Systematic Literature Review for Healthcare Applications

Juliano Endrigo Sordan[1], Mauricio Angeloni[1], Vania Regina Salvini[1], Bruno Dantas Yamashita[2], Cristina Ciliberto[3]

[1]Department of Production Management, São Paulo State Technological College (FATEC), Brazil
[2]Empresa Brasileira de Serviços Hospitalares (EBSERH), Brazil
[3]Department of Economics, University of Messina, Italy

Contact Person: Juliano Endrigo Sordan **E-mail:** julianosordan@yahoo.com.br

Abstract

Lean leadership plays a critical role in developing personnel and establishing a lean culture within healthcare institutions. This paper analyzes the evolution of literature concerning lean leadership in healthcare settings and assesses the various methods, techniques, and tools published on this topic. In particular, the study investigates the essential activities and skills for effective lean leadership in public hospitals. To achieve this, a systematic literature review was carried out using documents sourced from the Scopus and Web of Science databases. Following the screening, 82 documents were analysed with the assistance of Bibliometrix R software. The quantitative analysis reveals the evolution of scientific research on this topic, highlighting key studies, prolific authors, and critical sources. Additionally, the qualitative analysis identifies thematic clusters that underscore the practical applications of leadership in healthcare settings. The study results provide several theoretical insights into the topic, enhancing understanding of lean leadership principles and offering a more nuanced theoretical perspective on the diverse leadership styles explored in the literature. Finally, the paper provides insights for practitioners, highlighting effective strategies and practices for successfully implementing lean healthcare.

KEYWORDS: Lean Healthcare, Lean Culture, Leadership, Literature Review

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Ergonomics in Sports Medicine Management: Sustainable Approaches to Ensuring Athlete Health and Safety

Murtazi Todadze[1], Miranda Jankhoteli[2], Bella Goderdizhvili[3], Maka Buleishvili[4], Alexander Sharashenidze[5]

[1]Department of Business Technology, Georgian Technical University, Georgia
[2]Department of Nursing Education, Academy of Business and Technology, Sachkhere Branch, Georgia
[3]Department of Business Administration, Georgian Technical University, Georgia
[4]Department of Internal Medicine, Faculty of Medicine, Caucasus International University, Georgia
[5]Department of Marketing and Tourism, Georgian Technical University, Georgia

Contact Person: Alexander Sharashenidze **E-mail:** sharashenidzealexandre11@gtu.ge

Abstract

Ensuring athlete health and safety is a critical challenge in modern sports, exacerbated by increasing physical demands and changing environmental factors. As a core element of sports medicine, ergonomics plays a key role in optimizing athletes' physiological, psychological, and biomechanical functions, reducing injury risk, and enhancing performance. This study examines effective ergonomic strategies in sports, such as equipment optimization, load management, recovery techniques, and psychological support, while evaluating their impact on performance under dynamic conditions. By analyzing current sports medicine practices, the study provides practical recommendations for sports organizations, coaches, and healthcare professionals, emphasizing the integration of ergonomic principles to improve athlete health and safety management. The findings contribute to developing sustainable, holistic approaches in sports medicine, ergonomics, and ecology, fostering long-term athlete well-being through a comprehensive human resource management system.

KEYWORDS: Ergonomics, Sports Medicine, Athlete Health, Safety Management, Performance Enhancement

Quality of Working Life of Leaders: A Focus on Competences and Decision-Making at Work

Zuzana Birknerová[1], Eva Benková[2], Miroslav Gombár[3]

[1]Department of Department of Managerial Psychology, Faculty of Management and Business, University of Prešov, Slovakia
[2]Department of Intercultural Communication, Faculty of Management and Business, University of Prešov, Slovakia
[3]Department of Management, Faculty of Management and Business, University of Prešov, Slovakia

Contact Person: Eva Benková **E-mail:** eva.benkova@unipo.sk

Abstract

This paper examines the quality of working life (QWL) of leaders in the context of their competences and active participation in work decision-making, which is key to their effectiveness and job satisfaction. Based on the analysis of data collected from 996 respondents and using the QWL research instrument, we identified the key factors of Initiative, Responsibility and Flexibility. Using Exploratory Factor Analysis (EFA), we found a strong positive association between these QWL factors. The model shows a good fit to the data and provides a useful framework for describing the domain of competence and decision making at work. The results suggest that improving leaders' quality of working life is essential for effective management and achieving managerial goals.

KEYWORDS: Quality of Working Life, Leader, Competence, Decision Making

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Proactive Cultural Lean Safety – An Innovative Way to implement Lean Safety

Tiago Rodrigues[1], José Carlos Sá[2], Ana Rita Oliveira[3], Peter Hines[3], Andrei Bonamigo[4]

[1]Department of Mechanical Engineering, ISEP, Polytechnic of Porto, Portugal
[2]Department of Mechanical Engineering, LAETA/INEGI, ISEP, Polytechnic of Porto, Portugal
[3]Department of Business, South East Technological University, Ireland
[4]Department of Production Engineering, Fluminense Federal University – UFF, Brazil

Contact Person: José Carlos Sá **E-mail:** cvs@isep.ipp.pt

Abstract

This study explores the role of Lean methodologies in improving workplace safety by integrating structured management approaches with proactive hazard mitigation approaches. Lean principles, originally developed to increase efficiency and decrease waste, have been increasingly recognized due to its potential to strengthen safety practices. Lean safety is analyzed in this paper through case studies demonstrating the impact of Lean tools in minimizing workplace risks. Key Behavioral Indicators (KBIs) help to assess and understand employees' behaviors towards safety and further adherence to safety protocols, fostering a culture of accountability and continuous improvement.

The Cultural Lean Safety framework was developed, to address the lack of bottom-up communication allowing employees to actively contribute to safety improvements, reinforcing a leadership-driven and a collaborative safety culture. For this purpose, authors use the Shingo Model, where its cultural enablers, actively help to foster an environment where safety is embedded in daily operations. Toyota Kata further supports this approach by instilling structured problem-solving routines that drive continuous learning and proactive hazard recognition.

KEYWORDS: Lean Safety, Shingo Model, Behavior-based Safety, Toyota Kata, Key Behavioral Indicators, KBIs

Track I

The Impact of the ISO 9001 Standard on the Sustainability of Quality Management Systems

José Carlos Sá[1], José Costa[2], Francisco J.G. Silva[1], Bruna Sousa[2], José Dinis-Carvalho[3], Olivia McDermott[4], Hermilio Vilarinho[5]

[1]Department of Mechanical Engineering, LAETA/INEGI, ISEP, Polytechnic of Porto, Portugal
[2]Department of Mechanical Engineering, ISEP, Polytechnic of Porto, Portugal
[3]Algoritmi Centre, Department of Production and Systems, University of Minho, Portugal
[4]College of Science & Engineering, University of Galway, Ireland
[5]LAETA/INEGI, Faculdade de Engenharia, University of Porto, Portugal

Contact Person: José Carlos Sá **E-mail:** cvs@isep.ipp.pt

Abstract

Implementing and maintaining quality management systems allows organizations to standardize processes, improve performance, increase their competitive advantage and guarantee customer satisfaction. However, the success of these systems depends on the people who apply them, from top managers and middle leaders to employees, whose behaviors are shaped by social, economic and cultural factors throughout their lives. This study analyzes how the ISO 9001 standard influences and contributes to the sustainability of quality management systems, both in their implementation and maintenance. The aim was to analyze how the perspectives of employees and managers impact this sustainability, considering external factors that influence their attitudes and decisions. To this end, a survey was carried out with 100 participants from European countries, covering sectors such as industry, production, transport, distribution, logistics and the areas of science, technology, engineering and mathematics. The questionnaire, composed mainly of multiple-choice questions with a Likert scale, obtained 94 valid responses and showed acceptable internal consistency, with a Cronbach's alpha of 0.78. The statistical analysis, using Spearman's correlation coefficient, revealed that participants' income influences practices such as customer satisfaction, supplier evaluation and continuous improvement, while their position within the organization is associated with the management of non-conformities and continuous improvement. The Kruskal-Wallis tests reinforced these findings, indicating that income and country of residence have an impact on practices such as customer satisfaction and continuous improvement. However, no consistent associations were identified between other variables. This study contributes to a better understanding of the impact of employee perceptions on the sustainability of quality management systems based on the ISO 9001 standard. The results suggest that the implementation of the standard should consider these associations in order to mitigate resistance and enhance the benefits, especially in areas such as continuous improvement, customer satisfaction and management of non-conformities.

KEYWORDS: Quality, Standard, Continuous Improvement

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Sustainable Automotive Quality Management System: A Conceptual Model

Cláudia S. Silva[1], José Magano[2,3]

[1]GOVCOPP & ESTGA, Universidade de Aveiro, Portugal
[2]Research Center in Business and Economics (CICEE), Universidade Autónoma de Lisboa, Lisboa, Portugal
[3]Higher Institute of Business and Tourism Sciences (ISCET), Porto, Portugal

Contact Person: Cláudia S. Silva **E-mail:** claudia.margarida@ua.pt

Abstract

The automotive sector is described by complex supply chains, where quality management systems play an influential role in supplier performance. Different Quality Management Systems (QMS) standards have been published so that suppliers can develop management methods and practices to achieve high-quality levels and competitiveness. However, the benefits of implementing and certifying a QMS hinge on the meticulous implementation and monitoring process. Therefore, through a case study developed in the automotive sector, this work developed a conceptual model for the QMS implementation process supported in life cycle project management, identifying the main stages and its key elements. The originality of this work is justified by integrating the critical success factors and the sustainability issues at each project phase, underscoring the importance of the QMS implementation process.

KEYWORDS: Automotive Quality Management System, Life Cycle Project Management, IATF 16949, Implementation Process, Sustainability

Application of the Lean Methodology to Evaluate the Level of Waste in a Non-Perishable Goods Warehouse

Pedro Duarte[1], António Abreu[1,2,3], Teresa Morgado[1,2,4,5,6], Pedro Marques[1,7], Ana Dias[1,2], Vítor Anes[1,2], Helena Navas[4,5]

[1]DEM-ISEL, Department of Mechanical Engineering of Engineering School of Lisbon, Portugal
[2]UnIRE - Unit for Innovation and Research in Engineering, Polytechnic University of Lisbon, Lisboa, Portugal
[3]UNINOVA-CTS Center of Technology and Systems & LASI – Associated Lab of Intelligent Systems, Caparica, Portugal
[4]UNIDEMI – Research & Development Unit for Mechanical and Industrial Engineering, Department of Mechanical and Industrial Engineering, NOVA School of Science and Technology, Universidade Nova de Lisboa, Caparica, Portugal
[5]LASI, Intelligent Systems Associate Laboratory, Universidade do Minho, Portugal
[6]CINAV – Naval Research Center, Alamada, Portugal
[7]Lusófona University, RCM2+, Lisboa, Portugal

Contact Person: Teresa Morgado **E-mail:** tmorgado@dem.isel.ipl.pt

Abstract

With the increasing competitiveness in today's market, organizations are constantly required to act on improving productivity and reducing costs to stay competitive. It is within this context that Lean methodology emerges as a strategic approach to reduce or even eliminate waste and improve company processes. The objective of this work is to apply Lean methodology to evaluate and minimize waste levels in a warehouse for non-perishable goods. The concepts required to support the implementation of the model were initially studied, including lean methodology, warehouse management, and the importance of key performance indicators (KPIs) in evaluating operational performance. The proposed model involves the creation of a Performance Measurement System. This model is divided into seven subphases, which primarily consist of defining a set of indicators, evaluating them, and presenting results through a dashboard. As a result, the "Lean level" of each indicator was measured, providing a clear view of the performance of each warehouse activity. Finally, the identified waste during the implementation of the model was addressed, and improvement proposals were made to minimize this waste. The case study was carried out in an energy company warehouse, and the results indicated that the warehouse activities achieved a "Lean" level or were very close to it.

KEYWORDS: Lean, Waste, Warehouse, Performance, Key Performance Indicators

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The Strategic Role of Human Resource Management in Quality Management and Organizational Excellence: Lessons from Lean, TQM, and ISO 9000 Practices

Roland Schmuck[1]

[1]Department of Leadership and Organizational Sciences, Faculty of Business and Economics, University of Pécs, Hungary

Contact Person: Roland Schmuck **E-mail:** schmuck.roland@ktk.pte.hu

Abstract

Quality management has long been recognized as a key factor in business success, with human resource management (HRM) playing a crucial role in its effective implementation. This paper explores the connection between HRM and quality management by examining theoretical aspects and showing practical examples that enhance organizational quality. The study shows those quality management theories that emphasize the role of employee engagement, training, and leadership in quality improvement. The paper reviews HRM practices highlighting the problems of different management levels in quality commitment. While top management is commonly less involved in quality improvement directly, middle-level management and employees play a more active role. Findings suggest that while quality control dominates daily management, an ideal environment would prioritize motivation, strategic planning, and continuous improvement for long-term success. The findings show the importance of connecting HRM policies with quality management strategies, particularly through training, empowerment, and motivation systems. The study concludes that organizations should have a supportive culture that integrates quality management into their everyday operations.

KEYWORDS: Human Resource Management, Quality Improvement, TQM, Employee Engagement, ISO 9000, Lean Management

Exploring AI-Driven Training for Lean Manufacturing: A Case Study on Social Sustainability in an SME

Alice Aiudi[1]

[1]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy

Contact Person: Alice Aiudi **E-mail:** a.aiudi4@campus.uniurb.it

Abstract

This study investigates the role of AI-driven training systems in supporting Lean Manufacturing (LM) within small and medium-sized enterprises (SMEs), with a particular emphasis on social sustainability. LM is a well-established managerial approach aimed at reducing waste, improving efficiency, and enhancing overall productivity. However, its successful implementation relies not only on technical tools but also on the engagement and continuous development of human resources (HR). Many SMEs face challenges in maintaining LM principles due to limited resources for training, difficulties in enhancing employee participation, and constraints in ensuring long-term social sustainability. Artificial Intelligence (AI) is increasingly being recognized as a powerful tool for overcoming these limitations. AI-driven training systems provide personalized, data-driven learning experiences that can be adapted to the specific needs of employees. These technologies enable SMEs to enhance workforce skills, bridge knowledge gaps, and improve engagement, while also promoting social sustainability through improved job satisfaction, safety, and well-being. Little research focuses on how AI-driven training can effectively support LM adoption in SMEs, particularly from an HR perspective. To address this gap, this study employs a case study approach within an Italian SME, using a mixed-methods approach. Quantitative data will be collected through key performance indicators (KPIs) such as productivity, defect rates, waste reduction, and cycle time, measured before and after AI-driven training implementation. Additionally, qualitative insights will be gathered through semi-structured interviews with internal employees and participant observation. These methods aim to explore workers' perceptions of AI-based training, its role in facilitating LM adoption, and its broader implications for workforce development. By examining the intersection of AI, HR practices, and LM, this research aims to provide valuable insights into how AI-driven training can enhance lean adoption in SMEs while ensuring long-term social sustainability.

KEYWORDS: Lean Manufacturing, AI-driven training, Human Resources, Social Sustainability, SMEs

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Track L

Modeling and Evaluating Circular Scenarios: Industrial Ecology, Agent-based and System Dynamics Approaches

Veronica Casolani[1], Arnaud Diemer[2], Alberto Simboli[1]

[1]Department of Economic Studies, University "G. d'Annunzio" of Chieti-Pescara, Italy
[2]CERDI (CNRS-IRD), Clermont Auvergne University, Clermont-Ferrand, France

Contact Person: Veronica Casolani **E-mail:** veronica.casolani@unich.it

Abstract

In recent years, the concept of Circular Economy has gained increasing popularity, establishing as the reference paradigm in the transition from linear to circular production systems with the aim of increasing their economic, environmental and social sustainability; however, the complexity of such systems requires an interdisciplinary approach and specific methods and tools to support informed decisions in respect of the implementation of circular solutions.

In this regard, Industrial Ecology provides solid methodological basis for mapping systems, quantifying and optimizing material and energy flows and identifying critical aspects of a system and related solutions.

Conventional approaches, which are essentially static, do not often capture the dynamic complexity and multidimensionality of the transition from linear and circular production systems.

To address this limitation, advanced dynamic modeling techniques, such as Agent-based Modeling and System Dynamics, are currently being studied as potential decision support techniques.

Dynamic modeling allows simulating the temporal evolution of systems and analyzing how interactions between components and actors affect overall behavior; in particular: Agent-based Modeling allows the heterogeneous behavior of actors (e.g., firms, consumers, regulators) to be represented and the aggregate effects of their decisions to be explored. System Dynamics, on the other hand, allows the exploration of complex scenarios by modeling the relationships between the variables involved, feedback loops and nonlinear dynamics that determine systemic behavior, highlighting critical points on in which interventions should be focused.

This article highlights how static approaches can be integrated with dynamic techniques, such as Agent-based Modeling and System Dynamics, to support strategic decisions for the implementation of one or more circular solutions in a given context and a comparison of the techniques and the main related modeling software available will be presented.

KEYWORDS: Circular Economy, Industrial Ecology, Agent-based Modeling, System Dynamics, Decision Support System

The Communication Strategy of SMEs: The Emergence of a Heterogeneous Scenario

Emanuela Conti[1], Alessio Travasi[1]

[1]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy

Contact Person: Emanuela Conti **E-mail:** emanuela.conti@uniurb.it

Abstract

This study examines the marketing communication strategies employed by small and medium-sized enterprises (SMEs), with a particular emphasis on their role in achieving communication effectiveness and marketing objectives. Whilst large corporations implement well-structured communication strategies, SMEs often face challenges due to limited resources, despite the growing importance of communication in strengthening brand awareness and customer loyalty.

A systematic literature review (SLR) approach was adopted to collect and analyse data, which was divided into three phases: review planning, review execution, and findings reporting. The study identified five major content areas, highlighting the emergence of a heterogeneous landscape in SMEs communication management, through a review of over 80 academic publications from Scopus and Web of Science (WoS). The findings indicate an increasing awareness among SMEs of the strategic value of marketing communication.

Furthermore, the study emphasizes how digital transformation has created new opportunities for SMEs to develop targeted communication strategies, engage consumers more effectively, utilise a diverse range of digital tools, and assess the impact of their communication efforts.

The SLR process has also revealed key weaknesses in SME communication strategies, research gaps, and future research directions. The insights derived from this study are set to make significant contributions to the marketing communication literature while concurrently offering practical guidance for entrepreneurs, marketing managers and consultants. In addition, policymakers, academic institutions, and other stakeholders can leverage these findings to enhance communication strategies in an increasingly digital and competitive business environment. It is recommended that further qualitative research be conducted to facilitate a more profound comprehension of the evolution of communication management.

KEYWORDS: Marketing Communication in SMEs, Communication Strategy, Systematic Literature Review (SLR), Content Analysis

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Entrepreneurship and Management in Healthcare: How Artificial Intelligence Can Impact the Role of Healthcare Professionals and Support Risk Management

Massimo Pollifroni[1], Riccardo Pollifroni[2]

[1]Department of Management "Valter Cantino", University of Turin, Italy
[2]Department of Economics and Management, University of Pisa, Italy

Contact Person: Massimo Pollifroni **E-mail:** massimo.pollifroni@unito.it

Abstract

Artificial intelligence (AI) is changing the approach to risk management and the entrepreneur's role, with significant implications across all sectors, especially healthcare. In the field of business and management, AI is increasingly integrated from the optimization of internal resources to the engagement of external stakeholder. The literature highlights the applications and the role of AI in predict operational, financial, strategic risks, detect fraud, optimise supply chain management and automate complex processes. This paper focuses on the evolution of the concept of "entrepreneurship" over time providing a theoretical framework that will be applied in the healthcare sector. Compared to existing literature, this research fills a gap by offering a comprehensive and interdisciplinary approach that links AI capabilities with entrepreneurial strategy and risk management. Furthermore, the paper discusses the legal context, highlighting Regulation EU 2024/1689 and its development into the so-called "AI act", both of which provide guidelines for safe and responsible adoption of AI. Findings suggest that AI not only enhances operational efficiency and patient-centered care in healthcare but also fosters innovation and resilience in small and medium-sized enterprises (SMEs). In addition, further research should investigate the need to provide equitable access to AI technologies, understand their implications and well define associated risks.

KEYWORDS: Disability Management, European Higher Education, ENQA, EQAR, ANVUR

Conscious Marketing and Corporate Welfare: A Human-Centric Approach to Sustainable Business Strategy

Elisabetta Savelli[1], Vincenzo Gissi[1]

[1]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy

Contact Person: Elisabetta Savelli **E-mail:** elisabetta.savelli@uniurb.it

Abstract

The increasing emphasis on sustainability has led to the rise of sustainable marketing practices, integrating responsible business actions into corporate strategies. Within this framework, Conscious Marketing (CM) has emerged as a transformative approach that prioritizes ethical decision-making, stakeholder engagement, and corporate responsibility. Unlike conventional marketing, primarily focused on consumer satisfaction and profit maximization, CM extends its scope to all stakeholders, including employees, ensuring that business practices align with sustainability principles and long-term value creation. A critical yet often overlooked component of CM is the role of corporate welfare in promoting employees' well-being. Despite offering structured welfare programs, many organizations fail to enhance employees' well-being and, consequently, do not achieve the intended CM objectives. This failure is often attributed to the widespread adoption of standardized welfare programs not accounting for individual needs, values, and expectations. Therefore, organizations must shift from a compliance-based, top-down approach to an employee-centric model. In this context, the adoption of a Human-to-Human (H2H) marketing approach - emphasizing authenticity, empathy, and mutual benefit between companies and their workforce - could help businesses to develop welfare programs that are truly aligned with the expectations and specificities of individual employees. The present study explores the role of CM in sustainable business practices, with a particular emphasis on corporate welfare. Based on a questionnaire survey carried out on 182 Italian employees across different sectors, it investigates the alignment between corporate welfare initiatives and employee expectations, assessing their impact on perceived well-being. Additionally, it examines the role of H2H marketing principles in enhancing employee engagement and satisfaction and identifies key factors contributing to the effectiveness of corporate welfare strategies in fostering long-term employee well-being and corporate sustainability. The study contributes to the existing literature by bridging the gap between CM and corporate welfare, offering practical insights for businesses aiming to embrace a more human-centric perspective in corporate welfare strategies.

KEYWORDS: Conscious Marketing (CM), Human-to-Human Marketing, Corporate Welfare, Sustainable Marketing, Employee Well-being

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Human Resources in Era of Artificial Intelligence

Michaela Harničárová[1], Denis Tirpák[1], Simona Maďarová[1]

[1]Department of Management, Faculty of Management and Business, Slovakia

Contact Person: Denis Tirpák **E-mail:** denis.tirpak@unipo.sk

Abstract

The rapid advancement of digital technologies has fundamentally transformed the landscape of Human Resources (HR), reshaping traditional practices and introducing new paradigms for talent management, employee engagement, and organizational development. In the era of digitalization, HR professionals are leveraging tools such as artificial intelligence, machine learning, big data analytics, and cloud-based platforms to enhance decision-making, streamline processes, and foster a more agile workforce. The aim of this study is to identify new trends in human resource management that are emerging in the current digital world within the Slovak business environment. The research was conducted on a sample of 137 organizations spanning various sectors of the Slovak national economy. Data analysis was performed using descriptive statistics, and the proposed hypotheses were tested utilizing SPSS Statistics 26, employing Cramer's V and Kendall's tau b tests. Two out of the three examined hypotheses were confirmed.

KEYWORDS: Human Resources, Digitalization, Management, Machine Learning

Track M

Humanistic Leadership: A Management Innovation for Leadership in Stakeholder Capitalism

Tonino Pencarelli[1]

[1]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy

Contact Person: Tonino Pencarelli **E-mail:** tonino.pencarelli@uniurb.it

Abstract

The paper starts from the observation that the model of shareholder capitalism is no longer sustainable for the well-being of people, society and the planet and that the need to orient corporate strategies towards forms of stakeholder capitalism emerges. This paradigm shift requires innovating the approach to leadership, abandoning transactional approaches based on rewards and punishments in favor of humanistic leadership styles, which put people at the center of corporate decisions.
The aim of the article is to discuss the characteristics of humanistic leadership, a theoretical construct that is not yet fully defined which we try to outline by highlighting possible contributions of the various theories on leadership, also clarifying how leadership is still an intrinsic component of managerial work.
The study adopts a conceptual approach which, based on the main literature on the subject, seeks to identify the most significant traits that identify a humanistic approach to leadership.
The paper arrives at a humanistic leadership model which, in addition to theories on charismatic and transformational leadership, can be enriched by the contributions of theories on emotional intelligence, servant leadership, authentic leadership and values-based leadership. The study also highlights the fundamental role of managerial innovation in leadership processes. Innovative leadership adapted to the contemporary world must be attentive to people, society and the planet to encourage the affirmation of the stakeholder capitalism paradigm.
The added value of the contribution lies in proposing the necessary connection between Corporate Stakeholder Responsibility, the leaders as strategic actors of change and the shared value, as a goal to be pursued in the perspective of a humanistic management.

KEYWORDS: Humanistic Management, Humanistic Leadership, Stakeholder Capitalism, Leadership Theories

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Diversity and Inclusion in the Banking Sector: Exploring ISO 30415 Adoption in an Italian Financial Institution

Gail Denisse Chamochumbi Diaz[1], Federica Palazzi[1], Annalisa Sentuti[1], Francesca Sgrò[1]

[1]Department of Economics, Society, Politics, Carlo Bo University of Urbino, Italy

Contact Person: Annalisa Sentuti **E-mail:** annalisa.sentuti@uniurb.it

Abstract

The growing interest in sustainability and Corporate Social Responsibility (CSR) has made Diversity and Inclusion (D&I) essential for organizations (OECD, 2021), pushing them to address non-inclusive behaviors and discriminatory practices. The banking sector, in particular, has historically faced significant gender disparities, with women underrepresented in leadership and decision-making positions (Birindelli, Palea, 2024). Addressing gender diversity and fostering an inclusive work environment is crucial to creating balanced leadership teams, improving decision-making, and enhancing organizational performance (Birindelli, Iannuzzi, 2022; Paolone et al., 2023).

Diversity and inclusion though often used interchangeably, represent distinct concepts (O'Donovan, 2018). Diversity refers to the visible and invisible traits that distinguish individuals, reflecting societal heterogeneity within organizations (Griffin and Moorhead, 2006). Inclusion, on the other hand, is an approach to diversity that leverages these differences to benefit all employees, ensuring that their perspectives and contributions are valued (O'Donovan, 2018).

A significant advancement in this field is the introduction of ISO 30415, the first international certification for Human Resource Management – Diversity and Inclusion, published in May 2021 by the International Standard Organization (ISO). This certification offers a structured framework for organizations to continuously improve their inclusive practices and diversity. ISO 30415 acknowledges that each company is unique, and managers must define the best approach for their workforce based on the context and corporate mission. Therefore, customized diversity management activities are necessary (O'Donovan, 2018).

Despite the growing interest in D&I, there has been limited research on how financial institutions implement ISO 30415, especially regarding gender diversity (Intonti, 2025). This study aims to address this gap by exploring the adoption of ISO 30415 in an Italian bank—one of the first globally to achieve this certification. Using a qualitative case study approach, the research analyzes adoption drivers, benefits, challenges, and actors involved, contributing to the D&I literature and promoting more inclusive practices.

KEYWORDS: ISO 30415, Diversity and Inclusion, Credit institutions, Italy, Case Study

Challenges and Opportunities in Information System Implementation: The Case of Adega de Borba in the Portuguese Wine Sector

Joana Bilro[1], João Reis[1,2,3,4]

[1]Higher Institute of Management and Administration of Santarém, ISLA-Santarém, Santarém, Portugal
[2]Industrial Engineering and Management, Faculty of Engineering, Lusófona University, Campo Grande, Lisbon, Portugal
[3]RCM2+ Research Centre for Asset Management and Systems Engineering, Lusófona University, Campo Grande, Lisboa, Portugal
[4]Research Unit on Governance, Competitiveness and Public Policies (GOVCOPP), Aveiro University, Campus Universitário de Santiago, Aveiro, Portugal

Contact Person: João Reis **E-mail:** joao.reis@islasantarem.pt; jrdbilro@hotmail.com

Abstract

Digital transformation in the wine sector has driven the adoption of Information Systems (IS). The main objective of this research is to analyze the adoption of IS in the Portuguese wine sector, focusing on the challenges and benefits observed through a case study at Adega de Borba. The objective is to identify the benefits, challenges and strategies adopted by the company in the digitalization of its processes. The research used a qualitative approach, based on interviews with managers and employees, document analysis and direct observation. The results demonstrate that the implementation of IS, despite the significant competitive advantages they offer, faces technological and organizational challenges. The conclusions of this study contribute to the understanding of the impact of digitalization on the sector. In addition, they can support other wineries in the process of digital transformation, contributing to a more innovative, competitive and efficient wine sector.

KEYWORDS: Information Systems, Wine Sector, Digital Transformation, Technological Innovation, Portugal

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A Review of the Concept of University 5.0

Ilenia Colamatteo[1], Ilenia Bravo[1], Lucio Cappelli[1], Enrica Iannucci[1]

[1]Department of Economics and Law, University of Cassino and Southern Lazio, Italy

Contact Person: Ilenia Colamatteo **E-mail:** ilenia.colamatteo@unicas.it

Abstract

The revolutionary concept of "University 5.0" aims to transform universities into hubs of social and digital innovation. It emphasizes creating supportive structures and mechanisms, integrating sustainability and interdisciplinary approaches, and promoting cross-sector collaboration. This vision seeks to address contemporary global challenges and prepare students for a rapidly evolving world.
This paper aims to contribute to the scientific comprehension and definition of this new concept, by exploring how the implementation of a social-oriented quality management approach can potentially bring about the fulfilment of this vision. A literature review was conducted to collect and study previous papers regarding this novel topic. Using the Scopus, Web of Science and Google Scholar databases, articles were obtained based on the following string of keywords present in the abstract: (university OR "university 5.0" OR "university 4.0" OR "smart university" OR "higher education institution") AND ("social-oriented quality" OR "quality management" OR "sustainable quality") considering articles published from 2018 to 2025.
The results are focused on the main pillars of University 5.0, the potential benefits of its implementation in universities, and finally the obstacles that may be encountered in the process. The study is limited by the databases referenced and by the consideration of articles written only in English. This paper's findings can be helpful to university practitioners, managers, and other stakeholders as a guide for comprehending the concept of University 5.0 and the advantages of incorporating this approach into the strategic goals of higher education institutions.

KEYWORDS: Higher Education, Quality Management, Social-oriented Quality, University, Innovation

Industry 5.0: Towards a Competitive European Union Manufacturing Sector

Filipe Esteves[1], João Reis[1,2,3,4]

[1]Higher Institute of Management and Administration of Santarém, ISLA-Santarém, Portugal
[2]Industrial Engineering and Management, Faculty of Engineering, Lusófona University, Campo Grande, Lisbon, Portugal
[3]RCM2+ Research Centre for Asset Management and Systems Engineering, Lusófona University, Campo Grande, Lisboa, Portugal
[4]Research Unit on Governance, Competitiveness and Public Policies (GOVCOPP), Aveiro University, Campus Universitário de Santiago, Aveiro, Portugal

Contact Person: João Reis **E-mail:** joao.reis@islasantarem.pt

Abstract

Emerging economies and technological powerhouses have been increasing its competitiveness against the European Union (EU) manufacturing sector. Research into Industry 5.0 (I5.0) concept is crucial and considered to be the next challenge that the EU will embrace to regain its competitive edge, ensuring its manufacturing sector remains globally relevant, innovative and sustainable. Industry 4.0 represented an automation centered paradigm that has now changed with I5.0 to a human centered approach balanced with innovative technologies leveraged by human creativity and expertise. Being more productive while focusing on sustainability and societal consciousness is the primary focus of I5.0, which specifically highlights human-machine collaboration and enhances artificial intelligence, robotics, and Internet of Things. I5.0 concept aligns with EU's commitment to a sustainable and greener Europe focusing on circular economy concepts, improved energy efficient manufacturing processes to help manufacturers reduce their environmental footprint and stay competitive at the same time. Research can provide new insights on how to improve the use of emerging technologies like AI or addictive manufacturing to satisfy an ever more demand for personalized products to meet customer expectations and remain cost-efficient. Leveraging this capability EU manufacturers can differentiate themselves in global markets. Through I5.0 research, the EU can create new highly skilled jobs and stimulate economic growth reducing unemployment, establishing long-term prosperity focused on a human-centric industrial environment. I5.0 might be strategically necessary to embrace a new industrial era ensuring sustainable growth and safeguard a competitive future on the global economy. In conclusion, researching on I5.0 is not just a technological imperative but a strategic necessity for the EU. By embracing this new industrial era, the continent can reclaim its manufacturing leadership, drive sustainable growth, and secure a competitive future in global economy. This paper aims to bring a new perspective that will use a meta-review as a research strategy. First, we will conduct a review using the term "Industry 5.0" in Elsevier Scopus, to identify gaps in knowledge and suggest new areas for future research. Following, we will explore the EU perspective on I5.0 and its industrial policies. In this regard, we will present new taxonomies and frameworks to organize the concept in the EU and consolidate evidence on its impacts on productivity, employment and sustainability.

KEYWORDS: Industry5.0, Manufacturing Industry, Competitiveness, European Commission