Faculty of Economic Sciences
Petroleum-Gas University of Ploiești



CREATIVITY AND INNOVATION IN DIGITAL ECONOMY

BOOK OF ABSTRACTS

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INTERNATIONAL CONFERENCE
Creativity and Innovation in Digital Economy (CIDE 2025)
Chairs of the conference

Prof. PhD Rădulescu Irina
Prof. habil. PhD Panait Mirela
Prof. habil. PhD Tudorică Bogdan
Prof. habil. PhD Popescu Cătălin

CONFERENCE OBJECTIVE

- ✓ The aim of the conference is to provide a forum for discussion on innovative research, in the field of development economics. The impact of digital economy in innovation ecosystems is crucial. Some of the major trends of the future economy are open business, platforms, agile companies, and adaptive ecosystems. Digital economy is a component of technological progress and a major game changer in the economics.
- ✓ Scholars, freelance researchers, and Ph.D. candidates are invited to submit their abstracts related to the topics of the conference and development economics in general to be considered for presentation at the annual conference of the Faculty of Economic Sciences from Petroleum-Gas University of Ploieşti, Romania.

PANELS

- ✓ Innovative open business models and platforms (*Section 1*)
- ✓ Co-creation, living labs and innovation ecosystems (*Section 2*)
- ✓ Challenges of Artificial Intelligence in business (*Section 3*)
- ✓ New Pathways in Knowledge, Education and Law (*Section 4*)

CONFERENCE VENUE AND PARTICIPATION OPTIONS

The conference is organized in a hybrid system, in order to combine and facilitate the benefits of live and virtual interaction between presenters, in-person attendees, and virtual attendees:

- ✓ Onsite, at the Faculty of Economic Sciences, Petroleum-Gas University of Ploiesti – 39 Bucureşti Street, Ploiesti, Romania
- ✓ Online, via Conference website, based on a digital platform

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José M. Cantos



Professor **José M. Cantos** studied Economics at the University of Valencia, holds a PhD in Economics from the Complutense University of Madrid, and has been a professor at the University of Castilla-La Mancha since 1991. He has also taught courses at the University of Santiago de Cali (Colombia), the University of Warsaw, the Maison des Pays Iberiques (C.N.R.S) and the Université M. de Montaigne (Bordeaux III) in Bordeaux (France), as well as at other Spanish institutions. He has completed research stays at the Royal Complutense College of Harvard (Mass.), the Institut d'Economie Regional du Sud-Ouest (I.E.R.S.O.), the University of Santiago de Cali (Colombia), the Université de Bordeaux I, and the Montpellier Business School (Montpellier), in addition to several stays at Spanish research centers. He was Vice-Rector of the University of Castilla-La Mancha from 1997 to 2003 and has held positions on the boards of directors of several companies in the Spanish financial, banking, and insurance sectors. His research interests have included health economics, regional policy and development, fiscal federalism and international taxation, energy innovation and the environment, and the economics of corruption. Since April 2000, he has been a Full Professor of Applied Economics at the University of Castilla-La Mancha.

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Professor **MARIA GAVRILESCU** (https://orcid.org/0000-0002-0663-0316) is a chemical and environmental engineer whose work has significantly advanced sustainable industrial processes, environmental protection, and bioremediation technologies. She holds an engineering degree in Chemical Technology from the Polytechnic Institute of Iaşi, Romania, and a PhD in Chemical Engineering. Currently serving as Professor Emeritus at the "Gheorghe Asachi" Technical University of Iaşi, she has played a pivotal role in the development of environmental engineering research and the supervision of doctoral theses in the field. With a strong foundation in chemical and biological processes, Professor Gavrilescu has focused her research on biotechnological solutions for pollution control, including bioremediation, bioaccumulation, and phytoremediation. Her work also promotes sustainable production practices aligned with circular economy principles. She has led and collaborated on numerous national and international research initiatives, contributing to advancements in waste management, environmental risk assessment, and pollution mitigation. Internationally recognized for her academic achievements, Professor Gavrilescu has authored over 375 scientific articles, as well as books and patents, which have been extensively cited. As an editor of leading environmental journals, she actively contributes to shaping the global discourse in environmental engineering. Her affiliations with European scientific societies and advisory roles in research panels reflect her ongoing dedication to fostering sustainable technologies worldwide.

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CRISTINA GÓIS (https://orcid.org/0000-0003-1724-9411) is a Coordinator Professor (Associate Professor) at ISCAC | Coimbra Business School, part of the Polytechnic University of Coimbra (Coimbra, Portugal). She holds a Ph.D. in Accounting from the University of Extremadura (Spain) and a Master's degree in Accounting and Corporate Finance from Aberta University. She is Director of the Bachelor's degree in Accounting and Auditing, Coordinator of the Postgraduate Program in Accounting and Corporate Taxation, and Head of the International Relations Office. Since 2004, she has served as the Portuguese Coordinator of the international project ETAP – European Taxation and Accounting in Practice, which brings together 18 universities across 16 European countries. She has also been a Guest Professor at Università degli Studi del Piemonte Orientale "Amedeo Avogadro" (Novara, Italy), Saint Petersburg State University of Engineering and Economics – ENGECON (Saint Petersburg, Russia), and the University of Girona (Girona, Spain). Her primary research interests include corporate governance, IFRS implementation issues, integrated reporting, and sustainability reporting.

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Félix Puime-Guillén



FÉLIX PUIME-GUILLÉN has a Degree in Economics and Business Administration and a Doctorate in Business Administration and Management. Nowadays, He is Professor at the Business Department of the Faculty of Business and Economics of the University of A Coruña (UDC), Spain. His research focuses renewable energies, finance , entrepreneurship and circular economy . His research activity was developed in various international research projects and in several foreign research centers and universities. He was investigator of the UDC of several research projects and Erasmus+ projects. As a result of these investigations, articles in high-impact journals have been published.

Krishanu Rakshit



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BAIBA RIVZA (https://orcid.org/0000-0002-8719-3102) is Tenure Professor of Latvija University of Life Sciences and Technologies (Dr habilitus oec). Professor Baiba Rivza has different activities as Secretary - General, Latvian Academy of Sciences, Latvia, full member of the Academy, President of Latvian Academy of Agricultural and Forestry Sciences, Member of the Council of the Union of European Academies for Sciences applied to Agriculture, Food and Nature (UEAA), head of Latvia division and vice chair of the Baltic agri-economic section - Nordic Agricultural Science Association (NJF). Foreign member of the Georgofili Academy (Italy), Swedish Royal Academy of Agriculture and Forestry and Lithuanian Academy of Science. Her implication as expert from the European Academy of Sciences Academic Advisory Board (EASAC) in the field of economics. Professor Baiba Rivza iscoautor of scientific research „Circular economy: a commentary from the perspectives of the natural and social sciences"(www.easac.eu) and ex-minister of Latvia Education and Science is the proof of the scientific commitment. Main research areas of prof. Baiba Rivza are digitalisation, sustainability, agrobusiness, knowledge based economy, rural area development scenarios.

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ADAM SAMBORSKI is a professor at the University of Economics in Katowice (Poland). He is an economist and lawyer by profession. He specialises in business management (strategic management, corporate governance, corporate financial management, business legal forms, organisation and management theory). At the University of Economics in Katowice, he holds the following positions: Dean of the Faculty of Management and Head of the Department of Enterprise Management. Since 2008, he has been a member of the Management Faculty Council at the University of Economics in Katowice, and since 2020, he has also been a member of the Senate of the University of Economics in Katowice and the Scientific Committee for Management and Quality Sciences. He is also a member of the professional association of tax advisors in Poland (National Chamber of Tax Advisors) and the professional association of economists in Poland (Polish Economic Society). He is also a member of numerous academic networks (including Social Responsibility Research Network, Leadership and Organisational Design RIG, International Network for Pensions Research).

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MAHTA SAREMI (https://orcid.org/0000-0002-9609-304X) has a PhD in Environmental Planning from the University of Tehran. She has done research in the field of tourism planning, management, design and modelling tourism behaviour and has presented national and international papers. She has also done research for World Heritage Sites for their development with limiting the negative impacts of unmanaged visitations. She has also worked on the intangible aspect of WHS. She has obtained two master's degrees in environmental management and environmental design and engineering. Her BSc was in Environmental Engineering. She has been one of the main members of the Sport and Environment Commission of the National Olympic Committee in Iran. She has also worked with different NGOs as well as organizers of various conferences and forums. Her recent research work is on new technologies for tourism development.

Gulzada Shakulikova



Dr. GULZADA SHAKULIKOVA is the Rector of Safi Utebayev Atyrau University of Oil and Gas, a Doctor of Economic Sciences, and Professor. With over 28 years of experience in higher education and scientific research, she has significantly contributed to the development of Kazakhstan's oil and gas sector education. She is an active member of the KazEnergy Women's Energy Club and Chair of the Bolashak Alumni Council for the Atyrau Region. Dr. Shakulikova has authored more than 80 scientific works and initiated certified MBA programs in Sustainable Development and Women's Leadership in Energy. She continues to lead the strategic transformation of the university into a major center for engineering education in Kazakhstan. Dr. Gulzada Shakulikova is a Doctor of Economic Sciences, Professor, and Rector of the Safi Utebayev Atyrau University of Oil and Gas. Over the course of her distinguished career, Dr. Shakulikova has made a profound contribution to the advancement of higher education and scientific research in Kazakhstan, with a particular focus on the economics of the oil and gas sector. She plays an active role in professional networks, serving as a member of the Executive Committee of the KazEnergy Women's Energy Club and Chair of the Bolashak Alumni Council for the Atyrau Region. Dr. Shakulikova has amassed 28 years of professional experience, including five years as the Chair of the Management Board — Rector of the Safi Utebayev Atyrau University of Oil and Gas. Her career is closely associated with the development of higher education in Kazakhstan, having served in leadership roles at the nation's leading universities. She currently leads the strategic transformation of her institution into an industrial university dedicated to producing highly qualified engineering personnel for the national oil and gas sector. An accomplished scholar, Dr. Shakulikova has authored more than 80 scientific publications, including monographs, and her research is widely published in international academic journals. Her academic interests encompass macroeconomics, the oil and gas industry, oil and gas system management, sustainable development, and environmental issues. Understanding the critical importance of ESG (Environmental, Social, and Governance) principles, she initiated the launch of certified MBA programs in Sustainable Development and Women's Leadership in Energy, reinforcing the university's commitment to global sustainability.

Alexandru Stratan



ALEXANDRU STRATAN (https://orcid.org/0000-0001-7086-8604), professor habil., PhD in economic sciences, rector of Academy of Economic Studies of Moldova, corresponding member of the Academy of Sciences of Moldova has a successful activity, having prestigious scientific works, participating in various competitions, becoming Laureate of the Prize of the Academy of Sciences of Moldova in 2004, 2006 and Laureate of the Prize of the Academy of Sciences of Moldova "Scientist of the Year" (2014). In 2017 he was awarded the National Prize. Prof. Alexandru STRATAN has published as an author or in collaboration over 300 scientific and methodological-didactic works in the field of economics, including 7 monographs, 2 textbooks, 1 patent, 2 certificates of registration of objects of copyright and related rights. He has presented papers at numerous national and international scientific forums (Romania, Russia, Belgium, Georgia, France, Great Britain, Turkey, Latvia, Indonesia, Japan, China, etc.), participated in various professional internships, conducted research within various applied scientific projects. He also participated in the development of the regulatory framework: the National Strategy for Sustainable Development of the Agro-Industrial Complex of the Republic of Moldova (2008-2015), Licensing Conditions and Lists of Supplementary Documents, which are attached to applications for issuing licenses for practicing certain types of activity in the agro-industrial field, Integrated Development Strategies for a number of districts of the Republic of Moldova, SME Development Strategy, SND 2020, as well as other policy documents.

Upul Subasinghe



Prof. UPUL SUBASINGHE is the dean of Faculty of Applied Sciences from University of Sri Jayewardenepura, Sri Lanka. With over 30 years of academic and research experience in forestry and environmental science, Prof. Upul Subasinghe brings a multidisciplinary perspective to innovation in the digital economy. His expertise spans forest management, remote sensing, GIS, and sustainability standards—areas closely aligned with innovation ecosystems and digital platforms. Prof. Upul Subasinghe has led collaborative research on AI applications in tree growth modelling and pioneered studies on high-value forest products, integrating science with business innovation. As a trained Forest Certification Auditor and past President of the Institute of Biology, Sri Lanka, Prof. Upul Subasinghe contributes insights bridging technology, regulation, and co-creation in environmental and knowledge-based sectors.

Valentina Vasile



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HOW DO WE MANAGE STRATEGIC RESOURCES? SMART PRIORITIZATION VS. POLITICAL & ECONOMIC EXPECTATIONS

by Valentina Vasile, Institute of National Economy, Romanian Academy

The study aims to highlight the dynamics of the concept of "strategic resource" and the change in the hierarchy of resources in the last decade. It presents the current criteria for prioritizing a country;s strategic resources and the specific management model for these resources. The analysis of the specialized literature identifies two trends defined by: how important is this topic of analysis for experts and how important is the issue of national strategic resources for governments. It identifies and analyses the main components of the policies to support the responsible management of strategic resources, in the national interest of long-term development and of consolidating economic and geopolitical security. It presents as a case study the challenges of Romania related to the smart management of strategic resources in the current context of the policies of protection of national development (the Trump model of protectionism) and of regional security (EU strategic approach), in the context of the war in Ukraine. The results of the analysis indicate the minimal components necessary for redefining and prioritizing strategic resources for national security and prosperity. It concludes on the need to reconsider the real added value for the intelligent economic management of national strategic resources.

ASSESSING THE EXTENT OF ALIGNMENT BETWEEN SUSTAINABILITY REPORTING PRACTICES AND EUROPEAN STANDARDS: THE CASE OF THE OIL AND GAS SECTOR

by Bárbara Castro | Cristina Góis | Polytechnic University of Coimbra, Coimbra, Portugal | Polytechnic University of Coimbra, Coimbra, Portugal. CEOS.PP Coimbra, Polytechnic University of Coimbra

This study seeks to examine the European Sustainability Reporting Standards (ESRS) and to evaluate the sustainability disclosures of a selected sample of entities within the oil and gas industry in order to assess their degree of compliance with the newly introduced regulatory framework. Particular emphasis is placed on the concept of double materiality, introduced by the Corporate Sustainability Reporting Directive (CSRD), which constitutes a central analytical lens throughout the research. This concept represents a significant paradigm shift, as it requires entities to integrate both the financial implications of sustainability matters and the broader environmental and social impacts of their operations. By adopting this approach, firms are encouraged to provide a more holistic and comprehensive account of their sustainable performance, thereby extending beyond the financial perspectives traditionally addressed in corporate reporting.

With respect to impact materiality, particularly the identification of materially relevant topics, the findings indicate that all entities prioritize human and workers' rights as the most critical concern, followed by occupational health and safety. Although the mandatory application of the Corporate Sustainability Reporting Directive (CSRD) will only take effect in 2025, the evidence suggests a generally positive trajectory regarding the themes examined in this study. These results are consistent with expectations, as the oil and gas sector encounters significant challenges in reconciling resource exploitation with the principles of sustainable development.

The industry is progressively adopting practices aimed at mitigating environmental impacts and facilitating the transition toward renewable energy sources, thereby signalling an ongoing shift away from fossil fuel dependency. Moreover, the sector's increasing engagement with sustainability initiatives resonates with legitimacy theory, as entities seek to reinforce their social and environmental accountability to maintain societal acceptance and secure long-term success.

ASSESSING THE POTENTIAL OF SMART MANAGEMENT TOOLS FOR SMALL- SCALE WASTE (CIGARETTE BUTTS) IN CITIES, CASE STUDY: FERDOWSI AVENUE, TEHRAN, IRAN

by Mahta Saremi | Fatemeh Momeni | Mojgan Mahmoudi Rad | Behzad Eskandar Afshar | Adjunct Professor, University of Tehran, Alborz Campus, Department of Tourism Management, Tehran, IRAN | Senior Urban Planner and Conservation Specialist, Municipality of Tehran, Tehran, IRAN | Senior Urban Designer & Urban Researcher, Rahvand-Shahr Inc., Tehran, IRAN | CEO of Rahvand-Shahr Architecture & Urban Planning Consultants Inc., Tehran, IRAN

Urban waste is considered as a major concern in cities since it represents a set of challenges, such as urbanization, population density, and economic activities that generate a vast amount of waste. These challenges and impacts in the urban environment require innovative, scalable solutions to ensure sustainable and efficient disposal, recycling, and resource recovery. Urban waste becomes even more complex and destructive in the case of small-scale waste discarded in the urban space, particularly cigarette butts. In cities, where high population density coincides with widespread tobacco consumption, inefficient management of this type of waste poses significant risks. If not addressed effectively, it can result in the environmental degradation of soil and water resources, a decline in urban quality of life, and escalating municipal cleaning expenditures.

In the smart era, smart management tools for waste management have been offering promising solutions to tackle the environmental issues of cigarette butt waste, leveraging technology to efficiently track, collect, and dispose of discarded butts while promoting more sustainable disposal practices. The advancement of smart technologies and innovative approaches in urban management has enabled the monitoring, collection, and recycling of small-scale waste. Policies and strategic governance have also pointed out the need for smart technologies and their implementation for waste management. Therefore, this research tries to assess the potential of this avenue for practical smart waste management in urban environments.

This research tries to find out if new technologies and their usage for waste management can help efficient waste collection and disposal of small-scale waste, such as cigarette butts. The main aim is to evaluate the potential of cigarette butts as a recyclable resource (e.g., cellulose fiber recovery, energy production, and secondary industrial uses) and explore the feasibility of applying smart management tools in Tehran, the capital of Iran. It also tries to point out the role of the municipality, private sectors and, residents in waste management.

The research is based on the mixed-methods approach, combining international best

practices with local analysis and stakeholder insights. A systematic literature review establishes the theoretical framework and evaluation criteria in this research. Ferdowsi Street, a major urban corridor in Tehran, is assessed with regard to its potential for smart, small-scale waste management, focusing on cigarette butt litter. Structured field visits, observations, and GIS-based spatial analysis helped capture litter density, bin availability, and hotspot locations. Semi-structured interviews with municipal experts explored behavioural and managerial perspectives. Finally, based on the findings, a **context-specific conceptual framework is developed for** integrating global strategies with the socio- spatial dynamics of Ferdowsi Street.

Based on field observations and GIS-based analysis, clear spatial patterns of litter hotspots were identified, often concentrated in high pedestrian traffic areas with insufficient bin placement. These patterns reflect managerial challenges in the current practices of the municipality within the studied district. The impact of citizens' lacks of awareness regarding harmful smoking habits and the destructive consequences of cigarette butt littering in the urban environment were also identified, which can be considered as a major concern in urban management and requires attention.

According to the study, integrating smart technologies with context-specific approaches can significantly enhance the management of small-scale waste such as cigarette butts. Specifically, digital tools—including smart bins, IoT-based monitoring, and data-driven spatial planning—can limit waste dispersion and boost collection efficiency. When combined with participatory governance and stakeholder engagement, these technologies offer avenues to address environmental hazards, lower municipal maintenance expense, and advance recycling efforts, such as cellulose extraction or energy production.

The study further emphasizes the necessity of pilot projects to test smart solutions in real urban contexts, supported by clear municipal policies and public–private partnerships. By aligning technological innovation with behavioral insights and urban design, Ferdowsi Street can serve as a replicable model for managing small-scale waste in other historic-commercial corridors in Tehran and beyond.

Despite extensive research on urban waste management and smart systems, practical attention to small-scale waste, particularly cigarette butts, remains limited in most countries, such as Iran. This study addresses this gap on cigarette litter—a highly toxic pollutant and socially complex issue—along Ferdowsi Street, a historic-commercial corridor in Tehran.

The study's originality lies in its context-specific, multi-method approach: field observation to capture actual behaviours, in-depth interviews to understand motivations, and spatial analysis to identify litter hotspots. This triangulation provides a comprehensive

understanding of citizen behaviour and waste patterns that could not be achieved using a

single method.

Beyond diagnosing the problem, the research proposes context-aware smart solutions, including strategically placed smart bins aligned with both the street's historic architecture and users' behaviour. By combining a specialized focus, a unique case study, and practical smart interventions, this research offers a replicable model for managing small-scale waste in other historic-commercial urban corridors.

THE IMPACT OF ARTIFICIAL INTELLIGENCE OVER ECONOMIC COMPLEXITY: NEW DIRECTIONS IN SUSTAINABLE DEVELOPMENT

by Daniel Balsalobre Lorente | University of Castilla-La Mancha, Spain

In theoretical literature, this study demonstrates the evolution of Information & Communication Technology (ICT), natural resources (NRs), and the tourism industry, and their lingering connection with environmental sustainability (ES).

In the era of development, the world is facing severe challenges and environmental degradation. Artificial intelligence and technological advancements play a vital role in the natural resource economy in the digital age. So, information & communication technology (ICT) plays a significant role in sustainability in the digital era.

Long-run effect of income per capita, tourism, natural resources rents, urbanization, and ICT on environmental sustainability in 36 OECD economies from 2000 to 2018

Current research employs an Augmented Mean Group (AMG) and two-step GMM

Direct contribution of urbanization, natural resources, and tourism to CO2 emissions, while ICT reduces emissions

BIASES IN THE IMPLEMENTATION OF GENERATIVE AI: COMPANIES, ECONOMIC SECTORS, WORKERS, TERRITORIES

by Jose M Cantos | University of Castilla-La Mancha, Spain

It took the West 50 years to understand the potential reach of electricity since Thomas Edison invented the light bulb in 1879; it also took 20 years to understand the significance of the internet revolution since the adoption of the TCP/IP protocol in 1983; but it has taken the West less than 5 years to grasp the enormous potential of Artificial Intelligence (ChatGPT reached 100 million users in just 2 months). This acceleration of technical change over the last 150 years has caused significant stress in societies, but now a previously unknown ethical problem is being added. This is about the enormous uncertainty surrounding the role that human beings will play on Earth in just 15 or 20 years, given the foreseeable greater capacity for action that a non-biotic AI agent will have compared to that of an average human.

This paper addresses the impact that the implementation of AI is having today in various economic and business sectors, and the latest forecasts. We will see why the implementation of AI is benefiting some economic sectors more than others, why it has a high impact in certain areas and, in contrast, the impact will be less in others. We will also analyze why large companies are benefiting more than small ones and why everything indicates that the rich will benefit more than the poor. The expected results are worrying, but they can be reversed.

DECOMPOSITION AND DECOUPLING ANALYSIS OF CARBON EMISSIONS OF THE EU TOURISM SECTOR

by Oana M. Driha | University of Alicante, Spain

This study examines the evolution of carbon dioxide (CO_2) emissions from the tourism sector across the European Union (EU27) over the period 2008–2022, using an integrated approach based on the Logarithmic Mean Divisia Index (LMDI) and Tapio decoupling analysis. The novelty of this research lies in the introduction of six tourism-specific indicators—Carbon Intensity (CI), Carbon Structure (CS), Average Revenue per Tourist (ART), Tourism Spread Ratio (TSR), Tourism Pressure Index (TPI), and Number of Hospitality Structures (NHS)—to decompose the drivers of CO_2 emissions and assess their dynamic interaction with tourism growth. Empirical findings indicate that CI and ART were the primary contributors to emissions reductions accounting for 6.5 Mt. and 3.9 Mt. respectively, consistent with previous evidence on structural and technological improvements. However, emissions were increasingly influenced by spatial concentration and infrastructure growth, as captured by NHS (+3.9 Mt) and TSR (+1.6 Mt). The Tapio analysis reveals heterogeneous decoupling trajectories among member states in the period 2008–2022, with strong decoupling observed in countries such as France, Portugal, and Sweden, while others experienced coupling or negative decoupling patterns. Overall, a recessive decoupling, index equal to 1.052, is estimated for EU in the period 2008–2022. These results underscore the need for integrated mitigation strategies that combine technological innovation, spatial planning, and sustainable infrastructure development. The study contributes to the energy-tourism policy interface by offering a replicable framework for monitoring decarbonization progress in tourism-intensive economies.

ARTIFICIAL INTELLIGENCE, ECONOMIC GROWTH, AND INEQUALITY: A BIBLIOMETRIC ANALYSIS OF THE RESEARCH FRONTIERS.

by Carlo Drago | University Niccolò Cusano, Rome, Italy

Artificial intelligence (AI) has rapidly emerged as a general-purpose technology with profound implications for productivity dynamics, structural change, and income distribution. While the potential of AI to accelerate innovation and long-term economic growth is widely recognized, there are concerns about its distributional effects, particularly in terms of inequality of income, wealth, and opportunity between individuals, sectors, and countries. Despite a growing body of literature, the academic debate in economics, management, computer science, and social sciences remains fragmented. It lacks a systematic overview of the intellectual structure and emerging trends.

This study provides a comprehensive bibliometric analysis of the international literature on AI, economic growth, and inequality. Using data from Scopus, we create and analyze a corpus of publications. We then analyze this data also using keyword co-occurrence network data analysis. More specifically, we use ensemble community detection techniques to enhance the robustness of our results, which can lead to the identification of relevant cores of the debate.

We will analyze the specific results of the work, comparing the bibliometric results with the main thematic clusters shaping the debate: (i) AI as a driver of productivity and innovation; (ii) automation, task-based models, and labor market polarization; (iii) inequality in income and wealth distribution; and (iv) policy responses to mitigate risks and promote inclusive growth. Network mapping reveals a highly interdisciplinary field in which economics and innovation studies increasingly interact with computer science and public policy.

By synthesizing and summarizing the research landscape and identifying research gaps, this work aims to clarify the opportunities and challenges of AI for long-term growth and reducing inequality. In this respect, the findings try to provide academics, policy makers and practitioners with a structured framework to address the ongoing transformation of economies in the age of AI

GREEN INNOVATION AND DIGITALIZATION AS DRIVERS OF MARKET STRUCTURE IN THE GALICIAN CANNED FISH INDUSTRY

by Raquel Fernández-González | Félix Puime-Guillén | Carmen Rodríguez Rocha | Jorge Pazó Zurrón | Elias Ndjamba | Angel Egido-Portela | University of Vigo, Lagoas- Marcosende s/n, 36310 Vigo, Spain | Department of Business, University of A Coruña, 15008 A Coruña, Spain | Faculty of Economics and Business Administration, University of Santiago, Santiago de Compostela, Avda. do Burgo, s/n 15782 Santiago de Compostela | Faculty of Economics and Business Administration, University of Santiago, Santiago de Compostela, Avda. do Burgo, s/n 15782 Santiago de Compostela | Faculty of Communication and Social Sciences, University of Vigo, Vigo, Spain, | l'Institut de Psychologie et Sociologie Appliquées (IPSA) à l'Université Catholique de l'Ouest

This article investigates the interplay between green innovation, digitalization, and market concentration in the Galician canned fish industry, the leading sector in Europe by volume and value and the second most important globally. The study aims to determine whether the consolidation of the market structure in Galicia has been influenced by the adoption of green innovation strategies and digital transformation, particularly in the context of evolving institutional frameworks at the European, national, and regional levels. The research specifically addresses the differential capacity of firms—classified by size (micro, small, medium, and large)—to implement eco-innovative and digital practices. The central hypothesis posits that large and medium-sized enterprises have been more proactive and successful in integrating green and digital innovations, while small and micro-enterprises face greater barriers, potentially affecting their competitiveness and survival. The study also seeks to provide empirical evidence on how public policies and funding mechanisms have shaped the sector's transition towards sustainability and digitalization.

The empirical analysis is based on a comprehensive dataset comprising 113 companies operating in the Galician canned fish sector, covering the period from 2013 to 2021. Financial and structural data were sourced from the Orbis Europe and ARDAN databases, ensuring representation across all firm sizes. Companies were classified according to the criteria established by the European Commission Delegated Directive (EU) 2023/2775. The study employs a suite of market concentration and stability indicators, including the Herfindahl-Hirschman Index (HHI), concentration ratios (CR1, CR2, CR4, CR10), the Hall-Tideman Index (RHT), and the Dominance Index (DI). Additionally, market dynamics were assessed through gross and net entry and exit rates, as well as indices of instability and volatility. The analysis is contextualized within the broader institutional environment, considering the impact of European Green Deal policies, Spain's Circular Economy Strategy, and regional initiatives such as the Galician Circular Economy Action Plan and the activities of the Galician Innovation Agency (GAIN) and ANFACO-CECOPESCA. Special attention is given to the role of digitalization, including the adoption of Industry 4.0 technologies, digital

traceability systems, and the integration of advanced data analytics and automation in production processes.

The findings reveal that, despite the presence of a small number of dominant firms, the Galician canned fish industry does not exhibit high market concentration. The four largest companies consistently account for over 60% of market share, yet the HHI remains below 1500 throughout the study period, indicating a moderately concentrated but competitive market. The CR10 index fluctuates between 81% and 87%, reflecting the coexistence of a few large, highly internationalized firms with a broad base of smaller, domestically oriented enterprises. The market structure has remained relatively stable, with only minor variations in concentration indices over the nine-year period. Notably, the number of large companies increased from 7 to 10, while the number of micro and small firms declined, suggesting a gradual consolidation at the upper end of the market.

Large and medium-sized enterprises have led the sector's transition towards green innovation and digitalization, leveraging greater access to financial resources, advanced technological capabilities, and established networks with suppliers and customers. These firms have implemented a range of Industry 4.0 solutions, such as digital traceability, advanced wastewater treatment, by-product valorization, and renewable energy generation from waste. Public funding has played a significant role in supporting these initiatives, with substantial grants allocated to projects focused on circular economy, eco-design, and digital transformation.

In contrast, small and micro-enterprises have faced significant challenges in adopting green and digital innovations, primarily due to limited financial capacity, lack of technical expertise, and lower levels of digital literacy. Only a minority of small firms maintain a digital presence or utilize digital marketing tools, which constrains their ability to compete and adapt. Nevertheless, there is evidence of gradual progress, as some smaller firms begin to participate in collaborative projects and adopt emerging technologies.

The study concludes that while green innovation and digitalization have contributed to the modernization and sustainability of the Galician canned fish industry, they have not fundamentally altered the sector's market structure. The leadership of large firms has been reinforced, but the overall market remains competitive and dynamic. Policy recommendations include the need for targeted support measures to facilitate the digital and green transition of small and micro-enterprises, ensuring a more inclusive and resilient sector.

LIVESTREAMING AND DIGITAL E-COMMERCE- EMERGING TRENDS

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Livestreaming has emerged as an increasingly significant promotional tool in contemporary digital marketing, offering real-time interaction between organizations and consumers through content rich videos. Unlike static advertising, livestreaming provides immediacy, interactivity, and authenticity, characteristics that understandably enhance foster trust, ensure higher consumer engagement, and induce purchase intentions. Digital platforms such as TikTok Live, Douyin, Kuaishou, Bilibili, YouTube Live, Instagram Live, among others serve as cost-efficient channels for product demonstrations, brand storytelling, and communication. Emerging scholarship highlights livestreaming's role in strengthening parasocial relationships, cultivating brand communities, and generating higher levels of consumer loyalty compared to traditional media formats. Research in this area, unsurprisingly has been expanding extensively over the last few years. The current study attempts to examine the effectiveness of livestreaming as a promotional strategy, situating it within broader discussions of experiential marketing and interactive media. We study the different streams of literature under the domain of livestreaming and attempt to identify emerging trends and topics for future investigations.

VIRTUAL-ONLY SHAREHOLDERS' MEETINGS IN POLAND: LEGAL BARRIERS AND POLICY OPTIONS

by Adam Samborski | University of Economics in Katowice, Poland

The general meeting (GM) is the main power source in a joint-stock company (J-SC) and is not subject to control by other company bodies. It may be ordinary or extraordinary, and shareholders may participate in it in person or through proxies to exercise their rights (Modrzejewski & Wiśniewski, 2016). The primary function of the GM is decision-making (Van Der Elst & Lafarre, 2017). At the GM, shareholders pass resolutions concerning areas that are crucial to the company's operations (ISAP, 2024). It is also a source of information about the company for shareholders, providing an opportunity to discuss matters and ask questions of the company's authorities (Van Der Elst & Lafarre, 2017). These functions can be performed in a traditional or digital manner (Denis & Blume, 2021). Digitising GMs of shareholders may improve corporate governance in J-SCs by strengthening shareholder engagement in company affairs, improving procedure efficiency and reducing costs (Denis & Blume, 2021; Fontenot, 2018; Magnusson & Blume, 2022; Nili & Shaner, 2022). Under Polish law, pursuant to Article 406(5) § 1 of the Commercial Companies Code (CCC) of 15 September 2000, shareholders may participate in GMs in person or via electronic communication. However, electronic participation may be excluded within the company's articles of association. The way in which shareholders take part in a GM is decided by the person convening the meeting (ISAP, 2024). However, Polish regulations exclude the organisation of entirely virtual GMs, i.e. those not held at a specified physical venue (Horwath, 2007; Szumański, 2020). Three key legal restrictions should be noted here. Firstly, in accordance with Article 403 of the CCC, the GM must be linked to a physically designated venue (ISAP, 2024). Secondly, while Article 406(5) § 2 of the CCC allows shareholders to take part in the GM using electronic means of communication, it also refers to the physical location where the GM is taking place (ISAP, 2024). Thirdly, pursuant to Article 421 § 1 of the CCC, resolutions adopted by shareholders at a GM must be recorded in minutes drawn up by a notary public (ISAP, 2024). It is crucial to note that the notary public must be in person at the venue where the GM is held (Leśniak, 2020). Given the widespread digitisation of business processes and the availability of technologies enabling fully virtual GMs of shareholders, it is reasonable to question the extent to which current legal solutions in Poland hinder the efficiency of corporate procedures and generate additional transaction costs (Denis & Blume, 2021; Fontenot, 2018; Magnusson & Blume, 2022; Nili & Shaner, 2022; Williamson, 1996). It is also important to consider whether these solutions offer sufficient ways to increase shareholder engagement in company affairs. The question of how other countries have approached this issue and what the optimal solution for Poland might be can also be raised (ICLEG, 2022; OECD, 2023).

CHALLENGES OF ARTIFICIAL INTELLIGENCE IN AGRICULTURE: LATVIA CASE

by Baiba Rivza, | Peteris Rivza | Latvija University of Life Sciences and Technologies | Latvija University of Life Sciences and Technologies

The rapid development of digitization and Artificial Intelligence is transforming agriculture, creating opportunities for more efficient resource use, climate and environmental protection, and higher productivity. In Latvia, precision farming is applied in both large and small farms through sensors, robots, and data management systems. The presentation explores challenges, benefits, and the role of innovation in ensuring sustainable and resilient agriculture.

GOVERNANCE, KNOWLEDGE, AND THE DIGITAL FUTURE: BUILDING RESILIENT PATHWAYS IN EMERGING ECONOMIES

by Gulzada Shakulikova | PhD in Economics, Rector, Safi Utebayev Atyrau University of Oil and Gas (Kazakhstan)

The digital economy is not only reshaping industries but also redefining how societies create knowledge, design education, and frame the law. For emerging economies, this transformation offers a unique opportunity to leapfrog traditional models and position themselves as global leaders in innovation and sustainability.

This paper argues that corporate governance and higher education must work hand in hand to guide this transition. Boards of directors are called upon to move beyond compliance and act as stewards of digital innovation and ESG integration, while universities serve as laboratories for new competencies, ethical frameworks, and cross-sector collaboration. Kazakhstan and Central Asia provide a vivid case study of how resource-rich nations can transform governance, education, and policy to meet the challenges of the digital era.

The paper concludes that the future of resilience and prosperity lies in aligning governance with knowledge creation, ensuring that digital innovation becomes a force for inclusivity, transparency, and sustainable growth.

ECONOMIC COMPETITIVENESS OF MOLDOVA IN THE EU CONTEXT: A FOCUS ON COST CHALLENGES

by Alexandru Stratan | Academy of Economic Studies of Moldova

The Republic of Moldova, which became an EU candidate in 2022, must show that it can sustain a competitive economy and integrate into the EU single market. This paper evaluates Moldova's external competitiveness by looking at both cost indicators and trade performance. At the macroeconomic level, the analysis uses Real Effective Exchange Rates (REER) and Unit Labour Costs (ULC) to measure price and cost dynamics. At the sectoral level, agricultural and industrial exports are examined through international trade indices, while a new Composite Competitiveness Index (CCI) combines the findings. The study is based on official data for the period 2014–2023 and includes econometric models to identify how productivity, wages, investment, and inflation influence competitiveness. Results show that productivity growth and capital investment strengthen competitiveness, while fast wage increases and high inflation weaken it. Agriculture continues to be Moldova's main source of comparative advantage, but its volatility highlights the need for diversification. Industrial exports remain weak due to low technology and reliance on imports. The paper concludes that Moldova needs to stabilize costs at the macroeconomic level and at the same time invest in innovation and higher value-added industries to ensure sustainable competitiveness in the EU context.

BALANCING OPPORTUNITIES AND CHALLENGES: DIGITALIZATION TOWARDS A GREEN ECONOMY

by Upul Subasinghe | Faculty of Applied Sciences from University of Sri Jayewardenepura, Sri Lanka

The shift to a green economy necessitates creative approaches that strike a balance between environmental sustainability and economic prosperity. This approach has been made possible by digitalization, which has improved resilience, efficiency, and transparency across industries. Since early 2000, the growth of internet and mobile connections has expedited digitalization, fostering e-businesses, e-banking, and online shopping. After 2010, advances in artificial intelligence and machine learning helped make decisions more accurately and made it possible to use digital platforms for good governance. The COVID-19 pandemic in 2020 caused a rapid advancement when everything went online and remote working protected the business, governance, health, and education sectors from being severely damaged.

By automating procedures, cutting down on waste and delays, and making information quickly available, digitalization saves time in many ways. Therefore, it plays a major role in the green economy by improving energy efficiency and the integration of renewables; managing resources sustainably; reducing emissions and monitoring the climate; green finance and innovation; and governance and transparency. This helps to support circular economy businesses, boost ecosystem restoration and sustainable forestry initiatives, and create green jobs, particularly in the fields of renewable energy, energy efficiency, sustainable building, and waste management.

On the other hand, if issues like the high energy consumption of data centers, electronic waste, cyber security threats, and growing digital divisions are not addressed, they could jeopardize sustainability objectives. Digitalization is predicted to pose serious risks to social security and jobs. According to studies, by 2030, up to 30–40% of employment globally may be automated, with routine and repetitive jobs like data entry, retail, manufacturing, and transportation being particularly vulnerable. When digital adoption benefits affluent, educated, and urban populations, it might lead to societal upheaval because of growing inequality.

Therefore, policies that diversify employment prospects and develop alternative strategies to reduce social unrest are required. These strategies can be achieved through social security and safety nets, reskilling and upskilling programs, the development of jobs in new industries, and ethical technology governance.

CHALLENGES OF ARTIFICIAL INTELLIGENCE IN CLIMATE CHANGE MANAGEMENT

by Maria Gavrilescu | "Gheorghe Asachi" Technical University of Iasi, Romania, "Cristofor Simionescu" Faculty of Chemical Engineering and Environmental Protection, Department of Environmental Engineering and Management

Climate change poses one of the most pressing global challenges of our time, manifesting through extreme meteorological events, rising sea levels, biodiversity loss, food insecurity, and significant socio-economic disruptions. Addressing these issues requires innovative tools capable of managing complexity and uncertainty. Artificial Intelligence (AI) has emerged as a transformative technology in this context, offering powerful capabilities for analyzing large datasets, modeling climate systems, and supporting evidence-based decision-making.

This presentation explores the dual role of AI in climate change management: as both a source of innovative solutions and a field facing its own challenges. AI applications are highlighted across multiple domains, including short- and long-term climate prediction, optimization of renewable energy systems, monitoring and reducing greenhouse gas emissions, enhancing agricultural efficiency, and developing smart cities and sustainable urban mobility. Case studies demonstrate the successful use of AI for protecting forests, monitoring endangered species, and improving the integration of renewable energy into power grids. Emerging directions, such as coupling AI with quantum computing, edge AI for distributed environmental monitoring, green algorithms, and AI-assisted carbon capture, further underline the potential of these technologies to revolutionize climate action.

At the same time, the presentation critically addresses the limitations of AI, such as high energy demands, hardware constraints, data quality and accessibility issues, and difficulties in scaling solutions globally. These challenges underscore the importance of developing sustainable, transparent, and equitable approaches to AI deployment.

The analysis concludes that AI, if responsibly managed, can become a decisive instrument in mitigating climate change, enabling societies to adapt, recover, and build resilient futures. To achieve this, interdisciplinary research, supportive policies, and global collaboration are essential, ensuring that AI innovations contribute effectively to sustainable development and environmental protection.

EXPLORING DETERMINANTS OF D2C BRAND PURCHASE BEHAVIOUR AMONG YOUNG INDIAN CONSUMERS

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Young consumers are more open to experimenting with Direct-to-Consumer (D2C) brands and are increasingly shaping the future of retail consumption. India has the third-largest digital shopping base, with roughly over 1.4 billion internet users and 270 million online shoppers (Bain & Company, 2025). As of 2024, Indian D2C market is valued at over USD 80 billion and is projected to reach USD 100 billion by 2025, with fashion and accessories emerging as leading categories (Statista, 2025). However, the factors influencing young consumers' purchase intentions toward D2C brands remain underexplored. This study addresses this gap by applying Theory of Planned Behavior (Ajzen, 1991) and extending it with two additional constructs. The research examines how factors like price fairness, convenience, sustainability, and digital experience shape consumer attitudes, and how subjective norms and control beliefs, along with Fear of Missing Out (FOMO) and AI-enabled personalized recommendations, drive purchase intentions and behavior.

Primary data were collected using an online structured questionnaire administered to young consumers (aged 18-30 years) in Delhi (national capital) and Dehradun (state capital). Only consumers who had purchased any D2C brand in the past six months were included. Established scales adopted from prior research were used to measure respondents' opinions. All constructs were assessed on a five-point Likert scale. Using purposive and snowball sampling via social media, emails, and WhatsApp, 453 responses were collected, of which 439 valid responses were used. SmartPLS was used for analysis.

All hypothesized paths were significant at $p<0.05$, except for Purchase Intention → Purchase Behavior ($\beta = 0.017$, $p = 0.674$), indicating intention alone does not drive actual purchase. However, AI-enabled Recommendation significantly moderates this relationship ($\beta = 0.039$, $p = 0.033$), highlighting its critical role. Digital Experience ($\beta = 0.436$) and Sustainability Consciousness ($\beta = 0.385$) strongly predict Consumer Attitude, followed by Perceived Convenience ($\beta = 0.321$) and Price Fairness ($\beta = 0.292$). Peer Influence ($\beta = 0.272$) emerged as the strongest normative factor, ahead of Influencer Endorsement ($\beta = 0.120$) and Expert Recommendation ($\beta = 0.127$). PBC ($\beta = 0.693$) and FOMO ($\beta = 0.499$) also significantly influence Purchase Intention.

The results indicate that four antecedents significantly form consumer attitude, with digital experience and sustainability consciousness being the most influential. This study divided subjective norms into three parts. Each factor had a significant influence on purchase intention, with peer influence being the most powerful. The study also reinforced the strong influence of FOMO on consumer behavior. FOMO drives quick decision-making and heightens the purchase intention. The study revealed that purchase intention does not

significantly influence purchase behavior. An interesting insight from the study is how AI-enabled recommendations play a key role in bridging intention-behavior gaps. AI does not just enhance shopping experience; it actively drives sales and makes AI an essential tool in D2C marketing strategies.

This study offers recommendations for D2C brands in rapidly evolving Indian market. D2C brands must develop visually appealing, prompt, and responsive interfaces on mobile, social commerce, and websites. D2C brands should integrate sustainability narratives into branding and product storytelling. By eliminating intermediaries, D2C brands should clearly communicate fair pricing value propositions. To reinforce convenience, brands should promote convenience-oriented services. The strong influence of FOMO suggests that scarcity-driven strategies can effectively drive purchase intention. D2C brands must reflect youth values. The moderating role of AI recommendations reveals that personalized digital triggers can help in converting intention into purchase.

A DYNAMIC CAPABILITIES FRAMEWORK FOR ENTREPRENEURIAL ECOSYSTEMS IN THE TWIN TRANSITION

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In recent years, the urgency for sustainable development has intensified due to growing environmental concerns and the recognition of humanity's ecological overshot. According to the Global Footprint Network, current global resource consumption exceeds the Earth's biocapacity by 1.5 times, indicating the critical need for transformative practices and innovation to mitigate environmental degradation. In response, the United Nations Sustainable Development Goals (SDGs) have established a framework to guide sustainability efforts worldwide, particularly emphasizing the responsibility of high-emitting countries to significantly reduce their environmental footprint.

Technological innovation emerges as a crucial lever in this transition, particularly through the integration of **deep-tech**—science-based, high-impact technologies and **shallow-tech**, which applies digital tools to reinvent business models. Scholars have highlighted the potential of the **twin transition**, the synergistic integration of digital transformation and green innovation, as a key enabler of sustainable development. This convergence offers a promising frontier for entrepreneurial activity but also presents unique managerial and systemic challenges. Deep-tech ventures, in contrast to digital startups, require longer development timelines, significant investment, and complex stakeholder collaboration.

To address these challenges, this paper introduces an **ecosystemic dynamic capabilities framework** to analyze how digital and deep-tech innovations can be integrated effectively within entrepreneurial ecosystems. The study focuses on Italian **initiative**, that function as a **Digital Entrepreneurial Ecosystem (DEE)** that orchestrates diverse competencies and leverages a digital platform to support the identification of opportunities, the creation of new ventures, and the implementation of deep-tech solutions for sustainable agriculture.

The research adopts a qualitative case study approach, as a "polar case" that illustrates how digital ecosystems can enable twin transition. Drawing on the dynamic capability's theory (Teece et al., 1997), the paper investigates how **sensing**, **seizing**, and **reconfiguring** capabilities are fostered within the ecosystem. These capabilities enable the system's actors, entrepreneurs, universities, public institutions, and companies—to collaboratively respond to environmental challenges while promoting digital innovation and sustainability.

Findings suggest that the DEE plays a critical role in aligning entrepreneurial activities with green objectives. It facilitates knowledge sharing, resource access, and cross-sector collaboration, thus enhancing the ecosystem's capacity to generate innovative and scalable sustainable solutions. The study contributes to both the theoretical understanding of

entrepreneurial ecosystems in the context of the twin transition and to practical insights for policymakers and stakeholders aiming to foster sustainability-driven innovation.

This paper is structured as follows: first, a review of the key theoretical concepts is provided, followed by the methodology used for case selection and data analysis. The main findings are then discussed in light of the proposed framework, and the paper concludes with reflections on the implications for theory and practice in supporting the emergence of Twin Transition Unicorns, high-impact startups capable of driving both digital transformation and environmental sustainability.

FROM ALGORITHMS TO AUTONOMOUS AGENTS: ETHICAL, STRATEGIC, AND ECONOMIC CHALLENGES OF GENERATIVE ARTIFICIAL INTELLIGENCE IN FUTURE BUSINESS ECOSYSTEMS

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The rapid advancement of generative artificial intelligence (AI) and autonomous systems is reshaping the foundations of the digital economy. Businesses no longer employ AI solely as a supportive tool but increasingly face scenarios where intelligent agents operate as independent decision-makers, directly influencing strategic, operational, and financial outcomes. This paradigm shift raises critical challenges that extend beyond technological integration, encompassing ethical, strategic, and economic dimensions.

From an ethical perspective, the opacity of algorithmic decision-making, the persistence of embedded bias, and the difficulty of assigning accountability in cases of failure present major obstacles for responsible AI adoption. Strategically, autonomous AI agents are expected to disrupt value chains, redefine B2B and B2C relationships, and transform traditional models of corporate governance. At the economic level, the integration of generative AI into business ecosystems could enhance productivity and innovation, while simultaneously amplifying competition, accelerating workforce transformation, and redistributing resources in ways that may deepen global inequalities.

This paper proposes a forward-looking exploration of these challenges, emphasizing the transition from AI as a mere computational instrument to AI as an autonomous partner in business decision-making. By analyzing potential risks alongside emerging opportunities, the study contributes to the ongoing debate on how organizations can responsibly and effectively harness AI to remain competitive in the evolving landscape of the digital economy.

RESIDENCY AS A DETERMINANT OF FINTECH ACCESSIBILITY: THE CASE OF FOREX ALGORITHMIC TRADING.

by Innocent Novart | Jean Bertrand Subika | Mariusz Kicia | Maria Curie Sklodowska University in Lublin | Independent researcher | Maria Curie Sklodowska University in Lublin, Poland

This paper examines the regulatory and contractual asymmetries underlying the restriction of algorithmic trading services in the foreign exchange market for residents of Poland compared to those available in Tanzania and Rwanda. While brokers may permit the use of algorithmic trading services in lightly regulated jurisdictions like Tanzania and Rwanda, the same services by the same brokers are often restricted for clients residing in Poland due to stringent European Union financial regulations. The analysis focuses on the European Union's Markets in Financial Instruments Directive II (MiFID II) and its implementation by the Polish Financial Supervision Authority (KNF), which impose comprehensive investor protection, client classification, and risk management requirements on brokers. These include appropriateness assessments, extensive organizational safeguards, and compliance with Article 17 obligations governing algorithmic trading. In contrast, the East Africa region regulatory framework, represented by Tanzania and Rwanda, provides minimal oversight of international brokers and hence enabling greater service flexibility and broader service offerings including algorithmic trading. The study highlights the pivotal role of declared residency in determining applicable legal regimes and contractual terms, underscoring how brokers strategically adjust service offerings based on compliance burdens and risk exposure. Findings reveal that restrictions in Poland are not random but rather a consequence of regulatory harmonization within the European Union, aimed at safeguarding retail investors. This paper contributes to the broader discussion on financial regulations, cross-border service provisions, and the changing landscape of fintech accessibility and governance.

THE IMPACT OF ARTIFICIAL INTELLIGENCE ACROSS LIFE STAGES

by Podasca Raluca | Petroleum-Gas University of Ploiesti

Depending on the stage of life, the purpose and frequency of AI differ. Almost half of students and a quarter of working people use AI-powered applications more than once a week, especially for education and work. Only 15% of nonworking people and 9% of retired people use AI more than once a week, especially for health and entertainment. The aim of the paper is not to analyze how using AI during one life stage affects others, because there are not yet enough studies on this matter, but to study the impact of AI in each life stage separately, to highlight the challenges and opportunities of each age group.

The life stage perspective reveals three policy imperatives- the three I's – for advancing human development:

- Invest in universal access to electricity, digital devices and Internet and in the ability to use them efficiently
- Include people of all ages, genders and ethnicities in AI design and development
- Inform people of the risks and opportunities of AI, enabling them to make informed choices about when and how to use it.

During early childhood, excessive use of some digital technologies can have some adverse effects on socioemotional development and basic functions (can even alter brain development) with consequences that may last a lifetime.

For school children AI can develop learning opportunities and increase teachers' and tutors' work in many ways. Because school- age children spend a lot of time in an institution, capability-enhancing uses of technology are easier to implement through school curricula and practices in the classroom. An advantage of AI learning tools is the provision of equal opportunities for all students, including those with special needs. While AI has the capacity to adapt learning experiences to individual student needs, there are concerns about it potential to reduce creativity and other essential skills. Using AI-powered chatbots for schoolwork could also undermine opportunities to learn skills such as analyzing text, elaborating syntheses and writing coherent narratives. The writing process stimulates thinking, scrutinizing and self-improvement, tasks that all students should learn. But when it is outsourced to AI-facilitated tools, the reduction in cognitive effort can reduce memory retention and diminish learning and cognitive abilities. Learners may remember only where they stored information but fail to integrate it into their brain's secondary knowledge. This can create an illusion of having learned the information, increasing the risk of memory manipulation or corruption.

People in adult life have multiple identities, each involving different uses of AI. In professional life, AI may increase productivity and help workers to do more tasks, but if it

focuses on automation, it can also mean job losses for workers.

In general, older people who did not grow up with modern technology are more critical of AI and use it rarely. Communication apps and promising AI- facilitated tools in the health sector, which older people use the most can reduce social isolation and improve physical wellbeing.

As AI continues to reshape daily lives, our interactions with it become more complex. The life- stage perspective helps to separate risks from benefits and challenges from opportunities, identifying areas for action by multiple stakeholders in society.

Because AI is becoming part of nearly every area of people's lives and is spreading all over the world, governments by themselves can't make AI work for human development. It will take teamwork between economic, political, and social organizations to create and manage AI-based products and services in ways that improve people's abilities and support their growth. Governments can act as a central group, bringing together different actors to work together.

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AI-DRIVEN ENTREPRENEURSHIP EDUCATION IN SUB-SAHARAN AFRICA: OPPORTUNITIES, CHALLENGES, AND MULTIDISCIPLINARY PERSPECTIVES ON SOCIOECONOMIC INCLUSION

by Morufu Oladimeji Shokunbi | Lukman Raimi | Iznan Tarip | Quazi Mohammaed Habibus | Universiti Brunei Darussalam | Universiti Brunei Darussalam | Universiti Brunei Darussalam | Universiti Brunei Darussalam

This paper examines the transformative potential of AI-driven entrepreneurship education (EE) in Sub-Saharan Africa (SSA) to address prevalent socioeconomic challenges through an integrated academic-practice-policy lens. Academically, AI enables personalised learning, enhances assessment, adapts curricula, and closes the theory-practice gap with practical skills like business simulations and virtual mentorship. In practice, AI-enabled tools can widen access, empower youth, women, and rural communities by providing tailored content, virtual mentoring, business simulations, and digital incubation hubs. However, this requires a comprehensive strategy to address significant challenges, including affordability constraints, digital divides, low digital literacy, and institutional sluggishness in realising these benefits. The paper argues that effective AI adoption is dependent on a supportive policy framework, calling for AI literacy programs, strong governance, ethical regulatory mechanisms, and investments in digital infrastructure to prevent the aggravation of existing inequalities. It proposes a quadruple helix model that links academia, industry, government, and civil society to co-design context-sensitive strategies that support Sustainable Development Goals (SDGs) 4 (quality education), 8 (decent work and economic growth), and 10 (reduced inequalities) and align with national development objectives. In the end, AI should be seen as an enabler, not only to prepare future entrepreneurs but to foster resilient human capital and inclusive innovation in SSA for sustainable development.

OVERCONFIDENCE AND THE ADOPTION OF FINTECH SOLUTIONS: EVIDENCE FROM AN EXPERIMENTAL STUDY OF INDIVIDUAL INVESTORS IN POLAND

by Mariusz Kicia | Gabriela Dycha | University of Maria Curie-Skłodowska in Lublin (Poland), Institute of Economics and Finance | University of Maria Curie-Skłodowska in Lublin (Poland), Institute of Economics and Finance

The rapid growth of financial technology (fintech) has reshaped the landscape of financial services, offering novel solutions such as robo-advisory, blockchain-based applications, and AI-driven risk profiling. Yet, adoption of such innovations by retail investors remains heterogeneous and a certain level of self-confidence is required to trust in new solutions. Behavioral finance suggests that overconfidence is well established as a driver of excessive trading, risk-taking, and biased investment decisions. **The aim of this study** is to investigate whether, and to what extent, the level of overconfidence among individual investors supports the acceptance of innovative fintech solutions in the investment process. Specifically, we examine whether overconfidence explains the willingness of Polish retail investors to adopt a novel AI-based technology that measures risk tolerance in compliance with MiFID II. We also assess whether external recommendations – by a financial expert or an influencer – moderate this relationship, and whether gender differences shape these effects.

The study employed an experimental design with three groups:

- **Control group (N=114):** investors were presented with a description of a fintech solution in which artificial intelligence estimates risk tolerance based on personal data (social media and financial history).
- **Expert condition (N=112):** in addition to the solution description, participants were informed that the technology was recommended by a recognized financial expert.
- **Influencer condition (N=100):** participants were told that the solution was endorsed by a well-known influencer.

A total of **326 Polish individual investors** participated. Age, gender and education were controlled. Each participant indicated whether they would accept or reject the solution.
To measure overconfidence, we followed Pikulina et al. (2017) and used a **calibration-based overconfidence (CBO) index**. Participants answered 10 general knowledge questions, rating their confidence in each answer on a scale from 0 to 100 percent. For each individual, the **CBO score** was calculated as proposed in a source research.
Statistical analysis included reliability checks (Cronbach's alpha), tests of differences (t-tests, ANOVA, Mann–Whitney), and logistic regression models predicting acceptance of the fintech solution with CBO, gender, and scenario as predictors.

Responses to knowledge questions demonstrated good internal consistency (Cronbach's $\alpha \approx 0.77$), confirming that the test measured a coherent dimension of general knowledge. The resulting CBO distribution was approximately normal.

In the control group, 37% of investors accepted the solution. The rate increased to 48% when supported by an expert and to 45% when supported by an influencer. However, these differences were not statistically significant across groups.

Male investors showed substantially higher overconfidence than female investors (mean CBO = 0.077 vs. 0.011; t = -3.01, p = 0.003). Logistic regression confirmed that being male nearly doubled the odds of adoption (OR ≈ 2.48, p = 0.001).

Across the full sample, investors who accepted the fintech solution exhibited significantly higher CBO scores than those who rejected it (0.095 vs. 0.038; t = 2.74, p = 0.007). Logistic regression showed that a one-point increase in CBO raised the odds of adoption by more than five times (OR ≈ 5.5, p = 0.006).

Stratified analysis revealed that the positive effect of CBO on acceptance was present only among men (OR ≈ 4.96, p = 0.024), while no effect was detected among women. This suggests that overconfidence operates as a gendered mechanism influencing fintech adoption.

When separated by experimental condition, CBO predicted acceptance significantly in the expert condition (OR ≈ 13.0, p = 0.032), but not in the control or influencer conditions. This indicates that expert endorsement amplifies the effect of overconfidence on the willingness to adopt AI-based fintech.

This study contributes to the behavioral finance literature by demonstrating that **overconfidence promotes acceptance of fintech solutions** among individual investors. The effect is robust after controlling for gender and scenario, but is **driven mainly by male investors** and is **amplified when a financial expert endorses the innovation**. These findings extend previous research on overconfidence in investment behavior by linking it to technology adoption, an area of increasing importance in the digitalization of financial markets.

From a practical perspective, the results highlight that fintech providers and regulators should be aware that investor overconfidence – especially among men – may accelerate the adoption of risky or insufficiently tested innovations. At the same time, reliance on expert authority can strengthen this dynamic, potentially creating vulnerabilities if expert endorsements are used strategically in marketing.

Limitations include the use of a convenience sample of Polish investors and the reliance on a single measure of overconfidence. Future research should replicate these results in other markets, consider longitudinal designs, and explore how additional psychological factors (such as trust, risk aversion, or loss aversion) interact with overconfidence in shaping fintech adoption.

ARTIFICIAL INTELLIGENCE CHALLENGES IN BUSINESS: TAX PROFILES AND REGULATORY PERSPECTIVES

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Artificial intelligence (AI) is profoundly transforming the way economic activities are organized and conducted, introducing increasingly sophisticated automated processes that significantly affect the production, distribution, and consumption of goods and services. In this context, tax law faces a structural shift in the traditional economic paradigm, characterized by the dematerialization of production factors, the delocalization of digital infrastructures, and the operational autonomy of intelligent systems. This scenario gives rise to a set of theoretical and practical challenges that call for a rethinking of the legal categories upon which taxation is based, especially in the international domain.

One of the main problematic areas concerns the identification of the taxable event, both from an objective and subjective perspective. The use of AI-based solutions allows for the execution of economic activities without a physical presence in a given State, thereby challenging the traditional criterion of permanent establishment (Art. 5 of the OECD Model Tax Convention) as a connecting factor between the taxpayer and the taxing jurisdiction. Specifically, the emergence of "virtual permanent establishments" or decentralized servers raises doubts about the actual possibility for the source State to exercise its taxing powers when economic value is generated in a dematerialized context.

Simultaneously, the increasing decision-making autonomy of algorithms raises complex questions regarding the attribution of income generated by such systems. Who should be considered the taxpayer when income is derived from an economic process entirely managed by AI, without direct and continuous human intervention? Current case law and administrative practice provide limited guidance, as there are no explicit legal provisions addressing the attribution of income produced by algorithmic activity.

Another critical aspect relates to the valuation of intangibles associated with AI. Algorithms constitute highly valuable intangible assets, often developed and exploited by multinational enterprises through complex corporate structures, strategically allocating intellectual property rights to low-tax jurisdictions. In this context, the application of transfer pricing rules and the arm's length principle (e.g., under Article 110(7) of the Italian Income Tax Code) becomes particularly challenging, due to the difficulty in identifying reliable comparables and the volatility of economic value linked to data and algorithms.

As a result, tax authorities must update their control techniques, increasingly relying on data analytics, machine learning, and expert systems to effectively combat tax avoidance and base erosion practices. However, the use of these tools by the tax administration must be balanced against the protection of taxpayer rights, including transparency of procedures, the right to receive reasoned decisions, and the protection of personal data, in accordance with fundamental principles of tax law and European

regulations such as the GDPR.

At the supranational level, regulatory initiatives have intensified. The OECD/G20 "BEPS 2.0" project, through its two-pillar approach, seeks to adapt the international tax framework to the digital economy. Pillar One aims to move beyond the physical presence requirement by introducing a new nexus and profit allocation rules for highly digitalized businesses. Pillar Two, on the other hand, proposes a global minimum tax to counter harmful tax competition. Although not specifically tailored to AI, these measures apply to business models that heavily rely on AI technologies, and they represent an important step toward redefining the concept of taxable capacity in a modern economic context.

Nevertheless, a clear and coherent set of tax rules specifically addressing AI is still lacking. The principle of legal certainty, a cornerstone of tax law, is undermined by the absence of a systematic normative framework capable of comprehensively regulating these new phenomena. Therefore, a structural reform of the tax system is urgently needed—one that takes into account the ongoing transformation of the digital economy and provides new criteria for the allocation of value generated by automated processes.

In conclusion, the integration of artificial intelligence into business models poses significant challenges for contemporary tax law, which must now engage with changes that transcend traditional categories of taxation. The legislative response cannot consist merely of technical adjustments but must be based on a long-term vision that reconciles tax equity, system efficiency, and legal sustainability. Only through an integrated and multidisciplinary approach can a tax system be built that is capable of effectively regulating the algorithmic economy, while simultaneously safeguarding public interests and taxpayer rights.

THE EU AI ACT – A DOUBLE-EDGED SWORD FOR BUSINESSES

by STRĂOANU BONI MIHAELA | BAICU (POPA) MARINELA | TOTI LAURIAN | Petroleum and Gas University of Ploiesti | Valahia University of Targoviste | Valahia University of Targoviste

The European Union's AI Act, the world's first comprehensive regulatory framework for artificial intelligence, aims to promote safe and trustworthy AI. While the legislation establishes clear rules around risk-based classifications and compliance requirements, it poses significant challenges for businesses—especially small and medium-sized enterprises (SMEs)—due to high documentation, monitoring, and operational costs. Critics argue that strict regulations may hinder innovation and global competitiveness, particularly against less restrictive environments in the U.S. and China. However, the Act also creates opportunities: harmonized standards, stronger consumer trust, and the potential for a "Made in Europe" brand of ethical AI. This article explores the double-edged nature of the AI Act, assessing whether it will empower European businesses through global standard-setting or constrain them under regulatory burden.

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AI-DRIVEN COMMUNICATION STRATEGIES: TRANSFORMING INTERNAL AND EXTERNAL INTERACTIONS IN MODERN ORGANIZATIONS

by VUȘEAN (IOSIF) LILIANA | PhD student Valahia University of Târgoviște

The accelerated development of Artificial Intelligence (AI) has become one of the most disruptive forces shaping modern organizations. Among its most significant areas of impact lies organizational communication, both internally, between employees, departments, and management, and externally, in the relationships organizations build with customers, stakeholders, and the public. As organizations navigate increasingly complex and competitive environments, AI-driven communication strategies emerge as vital tools for enhancing efficiency, personalization, and resilience. Yet, the integration of AI into communication also raises pressing challenges related to ethics, privacy, algorithmic bias, and organizational acceptance.

From a theoretical perspective, AI-driven communication builds upon classical models of information transfer while adding new layers of automation, prediction, and personalization. Communication is no longer limited to linear message transmission but becomes a dynamic, data-enriched process shaped by continuous interaction between human and machine agents.

Internally, AI tools such as chatbots and virtual assistants facilitate faster information exchange and reduce administrative bottlenecks. Sentiment analysis tools enable organizations to monitor employee satisfaction in real time, while knowledge management systems support collaboration across teams and geographies. By streamlining information flows and offering tailored feedback, AI fosters a more transparent and engaging organizational culture.

Externally, AI has transformed the way organizations manage customer relationships and reputation. Intelligent customer relationship management (CRM) systems allow for highly personalized interactions, while AI-powered chatbots provide immediate responses, reducing waiting times and increasing satisfaction. In public relations, social listening platforms supported by AI can detect emerging crises by scanning media and social networks in real time, allowing organizations to respond swiftly. Marketing strategies have also been reshaped by generative AI tools, which can create targeted content and campaigns tailored to specific consumer segments, thereby maximizing engagement and return on investment. The benefits of these transformations are significant.

Organizations adopting AI-driven communication strategies can reduce costs, improve decision-making through rapid access to data, and deliver enhanced experiences for both employees and customers. Moreover, AI strengthens organizational resilience by enabling proactive risk detection and adaptive responses to crises. However, the adoption of AI is not

without limitations. Algorithmic bias remains a critical concern, as incomplete or distorted data can generate unfair or inaccurate outcomes. Ethical dilemmas regarding transparency and accountability also persist, raising questions about who is responsible for decisions made with AI assistance. Additionally, organizations often face resistance from employees who may perceive AI as a threat rather than a support tool, and regulatory compliance, especially regarding data privacy, adds another layer of complexity. To better understand these dynamics, this paper employs a mixed-methods research design. Quantitative surveys are proposed to capture employee and customer perceptions of AI-driven communication, while qualitative interviews with managers and communication experts provide deeper insights into adoption challenges. Content analysis of AI-generated communication, such as automated emails, social media responses, and press releases, will further highlight patterns of usage. The combination of methods aims to evaluate the effectiveness of AI, identify perceived benefits and risks, and assess managerial responses. Expected results suggest that AI acts as both an enabler and a disruption: it facilitates efficiency and personalization while simultaneously introducing risks related to ethics and trust. Managerial recommendations emerging from this study emphasize the need for gradual integration of AI technologies, accompanied by digital training programs and clear ethical frameworks. Rather than replacing human communication, AI should be positioned as a complementary tool that augments human capabilities. Building trust through transparency, ensuring fairness in algorithmic outputs, and maintaining human oversight are essential steps for responsible adoption. In conclusion, AI-driven communication strategies represent a transformative force within modern organizations. While they offer unprecedented opportunities for efficiency, personalization, and resilience, their effectiveness depends on how responsibly they are integrated into organizational structures. Balancing innovation with ethical safeguards and human oversight will determine whether AI becomes a true enabler of sustainable communication practices or a source of new organizational challenges. This study contributes to the growing literature on organizational communication by outlining both the potential and the pitfalls of AI, providing a roadmap for organizations seeking to embrace technological transformation while preserving human values.

THE ROLE OF AI IN OPTIMIZING RESOURCE MANAGEMENT AND ADVANCING CIRCULAR ECONOMY PRACTICES

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Growing global pressure on natural resources, driven by population growth, urbanization, and unsustainable consumption, is making the traditional linear economic model increasingly unsustainable. In response, the circular economy has emerged as a regenerative alternative that keeps products, components, and materials in use for as long as possible, thereby decoupling economic growth from resource depletion. Yet scaling up CE practices remains challenging because of fragmented data, limited predictive capacity, and the complexity of tracking material flows across global value chains. This study investigates how artificial intelligence can overcome these barriers and accelerate CE adoption. The main objective is to examine how AI optimizes resource management, reduces waste, and supports innovative business and governance models across industrial, urban, and entrepreneurial contexts.

The research adopts a structured literature synthesis combined with a comparative case-study analysis. Peer-reviewed sources published between 2020 and 2025 were systematically reviewed, focusing on AI applications in industrial operations, smart cities, energy systems, start-ups, and social enterprises. A cross-sector synthesis integrated qualitative insights and quantitative indicators to identify patterns of AI-enabled resource optimization and circular performance.

The findings demonstrate that AI is a strategic enabler of systemic circular transitions, simultaneously generating environmental, economic, and institutional benefits. Empirical evidence shows 20-30 % improvements in resource utilization and around 40 % reductions in waste, with industrial closed-loop systems achieving recycling efficiencies of about 83 %. Financially, AI-driven CE strategies are equally compelling with about 78 % of firms reporting positive returns on investment within 18 months, supported by 20-25 % savings in input costs and new revenue streams from high-quality secondary materials and product- service systems.

By integrating rigorous literature analysis with diverse case evidence, this paper provides a comprehensive cross-sector assessment of AI's role in advancing the circular economy. It shows how AI simultaneously achieves environmental efficiencies, economic profitability, and institutional innovation, offering actionable guidance for managers seeking to integrate AI-enabled circular practices in core business strategies.

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ARTIFICIAL INTELLIGENCE, ORGANIZATIONAL PSYCHOLOGY, AND SOCIAL SUSTAINABILITY: ADDRESSING HUMAN-CENTERED CHALLENGES IN BUSINESS INNOVATION

by Giovanni Spatola | Mario D'Avino | Antonio Capasso | Mercatorum University | Mercatorum University| Mercatorum University

Artificial Intelligence (AI) is increasingly embedded in business operations, transforming decision-making, customer engagement, and organizational processes. While its economic and operational benefits are well-documented, the psychological and social implications of AI adoption remain underexplored. This paper investigates how AI-driven innovation intersects with organizational psychology and social sustainability, emphasizing the role of human cognition, stakeholder perception, and ethical governance in shaping business outcomes.

Building on stakeholder theory (Freeman, 1984) and psychological constructs such as techno-anxiety, perceived fairness, and cognitive bias, the study examines how individuals within and outside organizations interpret and respond to AI systems. The research aims to develop a human-centered framework for AI adoption that aligns technological advancement with psychological well-being and ESG (Environmental, Social, and Governance) performance.

The study employs a mixed-methods approach. A systematic literature review identifies key psychological and social challenges associated with AI in business contexts. Empirical data are collected from three multinational companies across different sectors (energy, finance, and retail) that have implemented AI-based solutions. Semi-structured interviews with executives, employees, and external stakeholders explore perceptions of AI's impact on autonomy, trust, and organizational culture.

Quantitative data on ESG indicators—such as employee well-being, diversity and inclusion metrics, and community engagement—are analyzed to assess the social sustainability outcomes of AI adoption. Thematic analysis of qualitative data is complemented by statistical correlation between AI implementation and improvements in ESG performance.

Findings reveal that AI can enhance social sustainability when integrated with psychologically informed design and stakeholder engagement strategies. For example, AI-powered predictive analytics improve workplace safety and reduce stress-related incidents, while AI-driven learning platforms foster inclusive access to training and development. However, the success of these initiatives depends heavily on psychological factors such as perceived transparency, emotional safety, and trust in algorithmic decision-making.

Organizations that prioritize participatory design and ethical AI governance report higher levels of stakeholder satisfaction and improved ESG outcomes. Conversely, neglecting

psychological dimensions leads to resistance, reduced engagement, and reputational risks. These insights underscore the need for interdisciplinary approaches that combine AI innovation with psychological resilience and ethical responsibility.

This research contributes to the emerging discourse on human-centered AI in business by integrating organizational psychology with sustainability frameworks. It proposes a model for responsible AI adoption that enhances both performance and social impact. The study highlights the importance of aligning AI systems with human values, stakeholder expectations, and psychological well-being to foster sustainable innovation.

Future research should explore longitudinal effects of AI on organizational culture and mental health, and investigate sector-specific dynamics in AI adoption. The integration of psychological insight into AI governance is essential for building resilient, inclusive, and ethically sound business ecosystems.

FROM BLACK-BOX TO BUSINESS VALUE: EXPLAINABLE AI FOR BREAST CANCER DIAGNOSIS IN HEALTHCARE

by Raimondo Fanale | Universitas Mercatorum

Incorporating artificial intelligence (AI) into healthcare, especially for diagnosing breast cancer, could change the way medicine is done by making diagnoses more accurate and making it easier for doctors to make decisions.

But applying intricate deep learning algorithms sometimes leads to "black-box" models, which make it challenging for both doctors and patients to understand how decisions are made (Bjerring et al.). Not being honest makes patient-centered care less effective and tougher to employ because it's hard to trust, be responsible, and follow the regulations.

Explainable AI (XAI) helps doctors make sense of model outputs and businesses make money by providing more dependable and market-ready solutions (Ahmed et al.).

This study improved advanced convolutional neural networks (InceptionV3 and DenseNet121) on the BreaKHis dataset for binary classification (benign vs. malignant). We used standard criteria including accuracy, precision, recall, and F1-score to rate performance. To enhance comprehension, supplementary methodologies such as Grad-CAM, LIME, and SHAP were employed to generate heatmaps and feature-based elucidations. Simultaneously, qualitative input from clinical stakeholders was collected to evaluate the alignment of these explanations with medical thinking and their efficacy in cultivating trust in AI-assisted choices.

The results showed that DenseNet121 had an F1-score of over 90%, which means that deep learning can be very helpful for finding breast cancer. Adding explainability was a big step toward closing the adoption gap:

• Clinicians enjoyed clear visualizations and feature attributions because they made them more confident in the system's results.

Stakeholders responded that just being accurate wasn't enough; they considered that being able to explain it was equally important for using it in diagnostic methods.

Every explainability method gave different information: Grad-CAM revealed where the tumors were, LIME demonstrated how local features changed the results, and SHAP made sure that the attribution was the same. All of these things made it easier to choose.

The results suggest that the biggest challenges with adoption are not technological, but rather business and organizational ones.

1. Following the regulations — The EU AI Act and guidelines for medical devices make it hard for black-box technology to obtain certified because they need to be open. XAI makes it easier to follow the rules by giving people options to make decisions that can be reviewed.

2. Risk and Liability: Healthcare providers are legally at risk when they make decisions based on algorithms that aren't clear. XAI decreases the risk of liability by making sure that AI-assisted diagnoses can be tracked and contested.

3. Acceptance by the market and return on investment: Hospitals, insurers, and patients all need to be sure and responsible before they will utilize it. Explainability promotes trust,

accelerates up the process of getting people to use it, and increases the odds of receiving a good return on investment (ROI).

AI has a lot of potential for diagnosing breast cancer, but companies are cautious to employ it since they don't know how it works. This study shows that adding explainability to AI pipelines builds trust in the healthcare setting and helps with important business problems like compliance, liability, and market acceptance (Zhang et al.; Ahmed SF et al.).

Healthcare organizations and technology vendors may earn money, speed up the use of AI in cancer, and make sure that AI's potential in oncology translates to real clinical and economic benefits by shifting from vague predictions to systems that can be comprehended.

CORPORATE FINANCE TRANSFORMATION THROUGH ARTIFICIAL INTELLIGENCE: A STUDY OF STARTUPS IN BENGALURU, KARNATAKA, INDIA

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The rapid advancement of Artificial Intelligence (AI) has redefined business processes across industries, with corporate finance emerging as one of the most significantly impacted domains. Startups, with their agility and innovation-driven culture, represent fertile ground for AI adoption in financial practices. This study investigates how AI integration is transforming corporate finance functions in startups operating in Bengaluru, India—widely recognized as the country's leading startup hub.

The primary objectives of this research are threefold: (1) to analyze the extent and nature of AI adoption in corporate finance among Bengaluru-based startups, (2) to examine the impact of AI on financial decision-making, profitability, and risk management, and (3) to identify the key organizational and technological factors influencing the adoption of AI in financial functions. To achieve these objectives, a descriptive research design was adopted. A purposive sampling method was employed to select 50 startups across diverse sectors, including fintech, healthtech, edtech, and e-commerce. Data was collected using a structured questionnaire targeted at startup founders, Chief Financial Officers (CFOs), and finance heads, ensuring that responses were captured from individuals directly involved in financial strategy and decision-making.

The questionnaire captured quantitative and qualitative insights on AI applications in budgeting, forecasting, cash flow analysis, risk modeling, fraud detection, and investment decision-making. Data analysis was performed using descriptive statistics to evaluate adoption levels, Likert-scale ratings to assess perceptions of AI effectiveness, and advanced statistical tools such as correlation and regression analysis to measure the impact of AI adoption on key financial outcomes.

Preliminary findings suggest a growing trend of AI adoption in corporate finance among Bengaluru startups, though adoption levels vary across sectors. Startups in fintech and e-commerce demonstrate higher levels of AI integration compared to traditional sectors. Respondents reported significant improvements in financial precision, particularly in forecasting accuracy and real-time monitoring of cash flows. AI-driven tools also enhanced cost efficiency by automating repetitive financial processes, reducing operational errors, and enabling leaner finance teams. Notably, startups that adopted AI-driven risk management and fraud detection systems demonstrated a higher ability to anticipate and mitigate financial risks compared to non-adopters. Regression analysis indicates a positive correlation between AI adoption and profitability, with risk detection capabilities emerging

as a critical mediator in this relationship.

However, the study also identifies barriers to adoption, including high implementation costs, limited availability of skilled AI professionals, and resistance to change in financial decision-making processes. Organizational readiness and leadership commitment were found to be significant factors influencing successful adoption.

The findings hold significant implications for startup founders and financial managers considering AI adoption. By demonstrating tangible benefits such as improved financial decision-making, profitability, and risk management, this study highlights AI as not just a technological innovation but a strategic enabler of financial resilience and competitiveness. Furthermore, the research contributes to the growing academic discourse on AI in corporate finance, particularly within the context of emerging economies and startup ecosystems.

This study ultimately underscores that for Bengaluru startups, AI adoption in corporate finance is no longer a futuristic option but a present necessity to survive and thrive in dynamic markets. The results provide valuable insights for practitioners, policymakers, and academicians on fostering an AI-driven transformation of financial practices in the startup landscape.

FAMILY FIRST, AI SECOND? AUTHENTICITY IN CSR MESSAGES

by Fernando Reyes Reina | Pontifical University of Salamanca

This study examines how family firms safeguard perceived authenticity when communicating corporate social responsibility. AI-assisted tools for drafting text and images are now of common use for all firms. Transparency expectations in Europe (and Spain in particular as well) are also rising. The project asks a simple question: when does "keeping it human" help trust, and when does AI disclosure use hurt it?

The focus of this research is on two observable choices that firms disclose in public CSR communication. First, whether messages keep a human or family voice. That includes signed letters from family owners, first-person narratives, references to family heritage and values, or cues that foreground family identity. Second, whether and how firms disclose AI involvement (whether as AI-generated or AI-assisted) in text or visuals. Both choices are visible on websites, reports, and social channels, so they can be studied without privileged access.

The guiding idea is straightforward. Family firms hold socio-emotional wealth and care intensely about reputation and legacy. If audiences penalize AI-labeled messages, families may keep certain parts clearly human, avoid AI in specific moments, or disclose selectively to protect trust (Baek et al., 2024; Grigsby et al., 2025). This should be especially true in messages framed to evoke emotion. At the same time, European policy is moving toward stronger transparency standards for AI-generated and AI-manipulated content (as proved by the EU Artificial Intelligence Act, Article 50). Spain has also publicly signaled strict enforcement for unlabeled AI content, underscoring the importance of disclosure choices for firms operating within its jurisdiction.

The study connects two research domains. Work in marketing and public relations shows that a conversational human voice and personal cues can foster trust and perceived authenticity when used appropriately (Kelleher et al., 2006; Kelleher, 2009; Liebrecht et al., 2021; Barcelos et al., 2018). Family business research shows that signaling family identity and heritage can raise perceived brand authenticity and strengthen stakeholder connection (Binz Astrachan et al., 2018; Zanon et al., 2019). The project brings these two research streams together in the context of AI assisted communication under an evolving panorama of transparency norms.

Design is outside-in, using only public materials. The study builds a small but purposeful dataset of Spanish family firms with active CSR pages and/or regular CSR posts. Three dimensions are coded in messages: (1) voice: presence of named sign-offs, first-person narratives, and explicit family-identity cues, (2) tone: emotional vs. factual leaning, using simple linguistic markers from prior tone-of-voice work, and (3) AI transparency signals: presence, placement, and wording of disclosures. The coding scheme stays compact,

anchored in observable features that future communications teams could replicate and look into.

An audience evaluation complements the content analysis. Small focus groups compare human-signed and AI-labeled versions of the same controlled CSR message to rate authenticity and trust. The goal is not to produce population estimates, but to test whether voice, tone, and AI labels interact.

Anticipated contributions are practical and theoretical. Practically, the study will outline "authenticity-by-design" patterns for family firms. The aim is to help determine where human voice helps most. Also, when and how to disclose AI and which disclosure phrasings avoid unnecessary trust penalties. That would mean a guide to protect their socioemotional wealth endowment (SEW) from possible AI-induced penalties. Theoretically, the project integrates socio-emotional wealth with communication choices in the AI era, showing how identity concerns shape visible message features. Finally, it also aligns implications with EU transparency rules, helping firms navigate compliance while preserving perceived authenticity and what comes from this (emotionally and financially).

EXPLAINABLE FEDERATED LEARNING FOR SECURE TELEMEDICINE: PROTECTING PATIENT IDENTITY THROUGH PRIVACY-PRESERVING DEEPFAKE DETECTION IN DIGITAL HEALTH PLATFORMS

by Raimondo Fanale | Fabio Liberti | Vittorio Stile | Universitas Mercatorum | Universitas Mercatorum | Universitas Mercatorum

Secure telemedicine requires privacy-preserving deepfake detection in digital health systems to protect patient identification. Post-pandemic growth in the European telemedicine business from €45B to €380B has created a key vulnerability: medical deepfakes. Multiple European sources warn that deepfakes could destabilize digital healthcare infrastructure (European Data Protection Supervisor, 2023; European Union, 2024). This study proposes explainable federated learning (XFL) as the identity verification standard for telemedicine systems. Without such a norm, unavoidable breaches might severely erode public trust. Deepfake technology makes basic webcam checks and static ID images obsolete. Thus, federated, privacy-preserving detection systems need immediate regulation. These systems enable GDPR compliance and avoid medical identity fraud. Our investigation has three goals. We first highlight the fundamental healthcare privacy breaches in centralized deepfake detection methods. We believe federated options uniquely promote data sovereignty. Second, we will propose real regulatory frameworks with timetables, compliance standards, and penalties to mandate XFL adoption. Thirdly, we will analyze the economic effects of proactive vs reactive solutions and show that compulsory implementation is usually cheaper than medical identity fraud losses.

We focus on integrating technical architecture, regulatory effect evaluation, and economic modeling. The technical design uses a three-level hierarchical federated topology. Tier-1 includes large hospital networks (over 500 beds) that provide computational power and diverse patient demographics. Domain-specific attack patterns are available on Tier-2 telemedicine systems. Tier-3 edge devices enable real-time verification. Design architecture enforces differential privacy ($\varepsilon = 1.5$) to keep biometric data inside institutional boundaries while ensuring successful detection. We map GDPR Articles 25 (Privacy-by-Design) and 32 (Security-of-Processing) to technological standards to show how federated systems alone meet privacy and security requirements (European Union, 2016; European Data Protection Board, 2020). Clinicians require interpretable explanations for decisions when consultations are possibly fraudulent to avoid medical-legal liability. Deepfake detectors are Class-IIa software under the Medical Device Regulation (MDR) (Medical Device Coordination Group, 2025). GDPR protects privacy, and the planned AI Act addresses high-risk applications (European Union, 2024). Economic modeling includes market data from 15 European telehealth platforms, although estimates are theoretical until verified.

Interestingly, 94% of European telemedicine systems lack deepfake detection. The other 6%?

They rely on centralized systems, which may violate GDPR data minimization restrictions. Federated techniques detect deepfakes with 97.8% accuracy. While that's lower than 99.2% for centralized settings, federated solutions provide total anonymity. Now, this 1.4% accuracy difference? It pales in comparison to the mess that may follow a major biometric database leak, which could harm millions of people and raise ethical concerns, especially with AI's role in Africa (Tapo et al.). Starting up these systems? Budget €2–3 million per key platform. That's only 0.5% of their annual revenue—peanuts compared to what they could lose if security fails. One public medical deepfake might cost over €500 million in direct losses. The damage to their reputation could undermine years of progress in promoting digital health. Three phases make up our quick and realistic plan. First, from 2025 to 2026, we're considering voluntary adoption with tax advantages and less liability for mistakes. Phase two in 2027? New platforms should require it, while older ones may not. Finally, by 2028 and beyond, everyone requires it, and those who don't will face harsher penalties. These systems provide patients with plain-language and picture explanations, doctors with dashboards showing technical confidence levels and weird patterns, and regulators with solid, tamper-proof records to check compliance. Deepfake detection without explainability could make healthcare access harder for the elderly and tech-illiterate.

Can federated learning become a requirement for ethical digital health (World Health Organization, 2021)? Infrastructure investments don't become obsolete, which is beneficial. Simply adding federated verification levels improves security and privacy. Meanwhile, policymakers require help crafting policies that promote innovation and protect rights (World Health Organization, 2024). Researchers will naturally ask: what's the best balance between privacy and utility in medical situations? How can we develop cross-border federation protocols that protect data sovereignty? How can we assure it works for various groups in real life? Our system has limitations, such as untested economic estimates and technical challenges for smaller clinics (World Health Organization, 2024). Our advice may also be outdated due to changing rules. However, waiting for something horrible to happen before acting is unacceptable when we can prevent it (World Health Organization, 2021). It's not just about technology—Europe must choose between leading the way in secure and private telemedicine or losing years of digital health advances due to security issues. Federated learning protects privacy and security. Technology, legislation, and economic benefits are clear. Not enough people want it before the market fails and people suffer. We'll see if we acted early or waited until prevention became fixing the harm.

THE INFLUENCE OF GENERATIVE AI ON BUSINESS MANAGEMENT: EMERGING PATTERNS FROM SPANISH SMES

by María Elena Rodriguez Benito | Sandra Lizzeth Hernández Zelaya | Universidad Pontificia de Salamanca| Universidad Pontificia de Salamanca

Artificial Intelligence (AI) is becoming a central component of business management across industries. While recent advances, especially in generative AI, have drawn widespread attention, the broader integration of different types of AI systems in small and medium-sized enterprises (SMEs) remains insufficiently understood (Oldemeyer et al, 2025). This study explores how SMEs in Spain are adopting AI technologies, focusing on four main types: descriptive, predictive, generative, and prescriptive AI (Davenport & Ronanki, 2018). It examines which AI systems are being used, for what purposes, and how their adoption is shaping or failing to shape organizational processes and decision-making.

This study follows a mixed-methods approach to examine howare adopting and interpreting Artificial Intelligence (AI) in their business practices. The research is designed to capture the AI adoption, as well as to explore perceptions, challenges, and expectations associated with its use. The goal is to identify strategic factors that influence the integration of AI at the organizational level, such as managerial understanding, internal capabilities, and the perceived role of AI as a tool for operational efficiency or long-term transformation (Haefner et al., 2021; Raisch & Krakowski, 2021).

Preliminary findings indicate that descriptive AI such as dashboards, performance monitoring, and basic analytics is widely used and often embedded in existing software platforms. Predictive AI, including tools for demand forecasting or customer behavior analysis, is present but typically outsourced (García & Herrero, 2025). Generative AI tools like ChatGPT, Midjourney, or copywriting assistants are increasingly adopted for content creation, internal communication, and routine administrative tasks. However, their use is still largely experimental or assistive (Dwivedi et al., 2023; Ransbotham et al., 2023). In contrast, prescriptive AI which offers decision-making recommendations, is rarely implemented, and often viewed with skepticism due to concerns about accuracy, transparency, and organizational readiness (Schroeder, 2022).

A common pattern across cases is a cautious and fragmented adoption of AI (Hussain & Rizwan, 2024). While SMEs are interested in AI technologies, their use is often superficial and limited to non-critical processes. This aligns with previous studies suggesting that AI adoption in SMEs tends to be incremental rather than transformative (Bughin et al., 2019; Wessel et al., 2021). Moreover, the managerial understanding of AI capabilities and limitations is often limited, leading to underutilization or misalignment with strategic goals.

The study also reflects on the role of education and human capital in supporting AI adoption. As university educators, the authors are interested in how real-world practices can inform business curricula and better prepare students for working in AI-enabled environments. This includes not only technical training but also critical understanding of

AI's impact on organizational change, ethics, and innovation.

This research provides a grounded perspective on the current state of AI adoption in Spanish SMEs and highlights both the potential and the limitations of current practices. It identifies barriers such as lack of expertise, limited strategic vision, and uneven access to resources, which may hinder more effective and sustainable use of AI technologies. These insights are particularly relevant for policymakers, business support institutions, and educators aiming to foster a more inclusive and transformative digital economy.

BIG DATA FOR SUSTAINABLE ECONOMIC GROWTH: TRACKING AND FORECASTING INDICATORS IN EMERGING ECONOMIES

by Jora Banda | Iges Banda | European University of Tirana | Western Balkans University

This study explores the application of big data analytics to track and forecast sustainable growth indicators in emerging economies. Leveraging diverse datasets from international organizations and government sources, the research employs Python-based tools, including Pandas for data processing and Matplotlib for visualization, to analyse economic, social, and environmental metrics. By integrating descriptive analytics with predictive modelling techniques such as time-series forecasting, the study identifies key trends, correlations, and potential future scenarios for sustainable development. The findings offer actionable insights for policymakers and stakeholders, highlighting the role of data-driven approaches in promoting balanced economic growth while addressing social and environmental sustainability challenges. This research underscores the value of big data in shaping evidence-based strategies for sustainable development in emerging economies.

DATA-DRIVEN APPROACHES TO OPTIMIZING CIRCULAR ECONOMY INITIATIVES USING BUSINESS INTELLIGENCE

by Iges Banda | Jora Banda | Western Balkans University | European University of Tirana

This study investigates the application of business intelligence and big data analytics to monitor and optimize circular economy initiatives. By integrating datasets on resource usage, production processes, and waste generation, the research employs Python-based tools, including Pandas for data processing and Matplotlib for visualization, to identify inefficiencies and track key performance indicators. Predictive modeling and trend analysis are used to forecast material flows, recycling rates, and resource recovery potential, enabling data-driven decision-making for sustainable production and consumption. The findings demonstrate how analytics-driven strategies can enhance circularity, reduce waste, and improve overall environmental and economic outcomes. This research highlights the critical role of business intelligence in advancing sustainable practices within industrial and organizational contexts.

THE KNOWLEDGE COMMODITIZATION PARADOX: THEORETICAL AND PRACTICAL CHALLENGES OF AI-DRIVEN VALUE EXTRACTION IN INFORMATION-INTENSIVE ORGANIZATIONS

by Daniele Allega | Guglielmo Puzio | Universitas Mercatorum, LUISS Guido Carli | LUISS Guido Carli

The widespread adoption of artificial intelligence in business contexts has exposed a fundamental tension between the accumulation of organizational knowledge and its economic valorization. This paper examines the theoretical and practical challenges organizations face when attempting to transform proprietary knowledge assets into computationally accessible and economically viable resources. We analyze how the shift from human-mediated to machine-mediated knowledge consumption disrupts traditional business models while creating new forms of value that existing economic frameworks struggle to capture. Through a critical examination of semantic vectorization approaches and their implementation in organizational contexts, we identify three categories of challenges—technical, economic, and socio-organizational—that collectively constitute what we term the "knowledge commoditization paradox": the simultaneous necessity and impossibility of reducing complex organizational knowledge to tradable computational representations.

The theoretical framework draws on information economics, organizational knowledge theory, and computational linguistics to analyze the transformation of tacit and explicit knowledge into vector representations. We argue that vectorization processes fundamentally alter the epistemological status of organizational knowledge, converting contextually embedded expertise into decontextualized mathematical objects. This transformation enables unprecedented scalability in knowledge dissemination but introduces questions about semantic fidelity, interpretative validity, and the preservation of domain-specific nuance. The commoditization process reveals tensions between standardization requirements for market exchange and the heterogeneous nature of professional knowledge, suggesting limits to the fungibility of expertise even in computational form.

From an economic perspective, we examine how traditional pricing mechanisms fail when applied to granular knowledge transactions. The marginal cost structure of digital information creates pricing paradoxes where optimal economic efficiency suggests near-zero prices, yet sustainable business models require positive revenue streams. We analyze how micropayment architectures attempt to resolve this tension through usage-based pricing, while acknowledging that such models introduce transaction costs and cognitive overhead that may exceed the value of individual knowledge queries. The paper explores how network effects and information asymmetries complicate market formation for semantic assets, particularly when quality assessment requires domain expertise that

buyers may lack.

The organizational dimension reveals perhaps the most profound challenges. Knowledge commoditization through AI systems challenges fundamental assumptions about competitive advantage, professional identity, and organizational boundaries. We examine how the externalization of organizational knowledge into tradable vectors disrupts traditional hierarchies based on expertise control and creates resistance among knowledge workers who perceive AI-mediated knowledge sharing as professional displacement. The analysis reveals a paradox where organizations must simultaneously protect proprietary knowledge to maintain competitive advantage while exposing it to computational systems to realize economic value.

Methodologically, we employ a multi-level analysis examining technical architectures, economic models, and organizational dynamics across knowledge-intensive sectors including legal services, healthcare, and financial analysis. Our theoretical contribution lies in identifying the systemic nature of implementation challenges, where technical solutions generate economic problems, economic innovations create organizational tensions, and organizational adaptations reveal new technical requirements. This recursive complexity suggests that linear approaches to AI implementation in knowledge industries are fundamentally inadequate.

The paper identifies several unresolved tensions that merit further investigation. First, the semantic loss problem: how much contextual information is inevitably lost in vectorization, and what are the economic implications of this loss? Second, the value attribution challenge: how can organizations determine the economic value of specific knowledge fragments when value often emerges from combinatorial interactions? Third, the governance paradox: how can markets for computational knowledge maintain quality standards without centralized authorities that would undermine the distributed nature of knowledge production?

We conclude that the challenge of AI in business, particularly regarding knowledge assets, extends beyond technical implementation to encompass fundamental questions about the nature of knowledge, value, and organizational purpose. The vectorization of knowledge represents not merely a technical transformation but an epistemological shift with profound implications for how organizations create, capture, and distribute value. While semantic technologies offer promising approaches to knowledge monetization, their successful implementation requires reconceptualizing knowledge not as a static asset but as a dynamic process of meaning creation that resists complete computational capture.

This research contributes to the growing literature on AI implementation challenges by highlighting the irreducibly complex nature of knowledge commoditization. Rather than viewing technical, economic, and organizational challenges as separate problems requiring independent solutions, we argue for integrated approaches that acknowledge the systemic interdependencies among these dimensions. Future research should explore alternative frameworks for valuing and exchanging computational knowledge that preserve semantic

richness while enabling economic sustainability, potentially drawing on commons-based models, cooperative structures, or hybrid architectures that balance commoditization with knowledge stewardship.

THE ASYMMETRY OF FINANCIAL–ACCOUNTING INFORMATION AND THEIR LIMITED CREDIBILITY – A CONSEQUENCE OF POLYMORPHIC STRATEGIES APPLIED TO ECONOMIC ENTITIES IN THE DIGITAL ERA

by Monica Tegledi | George Enescu | Viorica Ursu | Iurie Ivanov | Petroleum-Gas University of Ploiești | Petroleum-Gas University of Ploiești | Universitatea Tehnică a Moldovei | Universitatea Tehnică a Moldovei

In the context of the contemporary economy, characterized by complexity and volatility, financial-accounting information represents an essential strategic resource for substantiating economic decisions. However, the accuracy and completeness of this information are often compromised by the phenomenon of information asymmetry, which causes distortions in decision-making processes and affects the proper functioning of market mechanisms.

The purpose of this study is to examine the relationship between the quality of financial-accounting information, information asymmetry and the credibility of reporting, considering the polymorphic strategies adopted by economic entities.

The major objectives pursued are:

• Identifying the determinants of information asymmetry in financial reporting;

• Analysis of the impact of these asymmetries on the quality of economic decisions and market efficiency;

• Evaluation of the role of the conceptual framework of financial reporting in reducing information gaps;

Proposing directions for optimizing reporting processes to increase transparency and credibility.

The methodological approach is based on a mixed approach, combining qualitative analysis (study of the conceptual framework, legislation and international standards) with quantitative analysis (interpretation of financial data, identification of reporting patterns).

This approach allows:

• Triangulation of information, by correlating data from various sources;

• Comparative analysis between economic entities that comply with the principle of a true and fair view and those that provide incomplete or inaccurate reporting;

• Cost-benefit assessment associated with the provision of additional information, according to the conceptual framework of financial reporting.

The expected results highlight that information asymmetry is strongly correlated with:

• The degree of opportunity of information – reporting delays reduce the relevance of data;

• Cost-benefit ratio – additional information is provided only to the extent that the benefits exceed the associated costs;

• Application of professional judgment – the level of competence and professional ethics

directly influence the quality of the information provided.

The information gap associated with imperfect markets is influenced by the nature, complexity and availability of financial and accounting information. This gap materializes in the emergence of information asymmetries, determined by heterogeneous behaviors of economic entities: some resort to incomplete or inaccurate reporting, diminishing the information quality of financial statements, affecting competition and reducing users' trust in published data, while others adopt reporting practices according to the true and fair view principle, thus contributing to increasing transparency and reducing uncertainty in the decision-making process.

Information asymmetry and limited credibility of financial and accounting reports are critical factors in assessing economic performance and in substantiating investment decisions. Reducing these asymmetries requires:

- Strengthening the regulatory framework regarding transparency and financial reporting;
- Stimulating the consistent application of the true and fair view principle;
- Developing audit and control mechanisms that prevent the provision of incomplete or erroneous information.

Therefore, optimizing financial reporting processes and increasing the level of transparency are essential conditions for strengthening user trust and for the proper functioning of economic markets.

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ACCOUNTING IN THE AGE OF ARTIFICIAL INTELLIGENCE

by George Enescu | Monica Adriana Ţegledi | Petroleum-Gas University of Ploieşti, Romania | Petroleum-Gas University of Ploieşti, Romania

Since 2022, artificial intelligence (AI) has become increasingly integrated into the daily lives of individuals, as well as in companies and institutions. This shift towards AI has a rich history, having developed gradually over more than 70 years of advancements in information technology systems.

Accounting was one of the first professions to be computerized, as it is well-suited to this approach. It involves working with numbers and symbols, and, like computer systems, it has its own language created by humans, which can be easily translated into computer language. Moreover, accounting often consists of repetitive tasks. Historically, human intervention was mainly required for data entry and analysis. However, with the widespread adoption of digitization and interconnected applications, data entry has become largely automated.

The area where human intervention remains crucial is data analysis. This need arises primarily from unique situations that have not been encountered before, which require a deep understanding and interpretation of economic phenomena. Currently, this activity is being increasingly taken over by AI, which can access and interpret vast amounts of data using specific algorithms. The primary barrier to AI completely taking over accounting tasks is the lack of comprehensive databases that adequately represent economic phenomena in rare circumstances.

To achieve full automation in this field, more aspects of an entity's economic activities need to be digitized. In this context, the ability to synthesize and connect different economic phenomena must improve. Accounting software should be integrated into complex economic systems capable of tracking economic processes and activities, translating them into data while considering specific processing restrictions and rules.

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AI ADOPTION IN ROMANIA'S SMES – PROMISE VS. REALITY AFTER THE PANDEMIC PERIOD IN ROMANIA

by STRAOANU BONI MIHAELA | BAICU (POPA) MARINELA | TOTI LAURIAN | Petroleum and Gas University of Ploiesti | Valahia University of Targoviste | Valahia University of Targoviste

The COVID-19 pandemic accelerated digital adoption in Romania, raising interest in artificial intelligence (AI) among small and medium-sized enterprises (SMEs). While businesses experimented with chatbots, predictive analytics, and automation, actual AI integration remains limited compared to the EU average. This article examines the key challenges Romanian SMEs face in the post-pandemic period: high upfront and ongoing costs, weak IT and cloud infrastructure, a shortage of AI specialists compounded by brain drain, and cultural resistance among managers. Although AI offers opportunities to increase efficiency and competitiveness, adoption is still more hype than reality for most Romanian SMEs. Targeted support through EU funding, affordable AI tools, and workforce training could help bridge this gap and turn post-pandemic momentum into lasting transformation.

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IDENTIFYING CRITICAL SUCCESS FACTORS FOR THE IMPLEMENTATION OF AI IN THE TOURISM INDUSTRY

by Seyed Mohammadbagher Jafari | Sarehsadat Rahmani | University of Tehran | University of Tehran

The integration of Artificial Intelligence (AI) in the tourism industry holds transformative potential, promising to revolutionize customer experiences, streamline operations, and enhance decision-making processes. Despite this capacity, the successful implementation of AI technologies poses a multifaceted challenge influenced by a variety of critical success factors (CSFs). This study aims to systematically identify these CSFs through an extensive literature review. Employing a qualitative research approach, this study meticulously examined existing studies and publications related to AI in tourism to extract the essential elements that facilitate effective AI adoption. The findings of this research highlight several key factors pivotal to successful AI integration, including a) organizational readiness including the availability of skilled personnel, infrastructure, and a supportive culture; b) effective stakeholder collaboration among various stakeholders including businesses, technology providers, and regulatory bodies; c) data quality and management that is essential for AI systems to function effectively; d) robust technological infrastructure including hardware, software, and network capabilities; and e) comprehensive regulatory frameworks to address ethical considerations, data privacy, and compliance issues. Furthermore, the study highlights the significance of fostering a cultural change within organizations that includes fostering an innovative mindset, encouraging experimentation, and overcoming resistance to change. By providing a structured framework for understanding the dynamics of AI implementation in the tourism sector, this research contributes valuable insights to the existing body of knowledge. It offers practical recommendations for industry practitioners seeking to navigate the complexities associated with AI integration. Ultimately, by addressing these critical success factors, stakeholders can enhance their competitiveness and sustainability in an increasingly digitalized tourism landscape, paving the way for future research activities in this evolving field.

ARTIFICIAL INTELLIGENCE AS A DRIVER OF INNOVATION AND SUSTAINABILITY IN TOURISM ECOSYSTEMS: A QUANTITATIVE ASSESSMENT OF THE LITERATURE

by Gentian Hoxhalli | Carlo Drago | Valentina Giglio Moro | Angelo Leogrande | Luarasi University | Niccolo Cusano University | Niccolo Cusano University | LUM University Giuseppe Degennaro

The tourism ecosystem is in change, explicitly driven by artificial intelligence (AI), a technology with many potential applications. In this context, AI can explicitly facilitate the development of new services and help achieve sustainability goals. Based on the conceptual framework of innovative tourism ecosystems, this paper, using bibliometric analysis, examines how AI can contribute to sustainable tourism development by enhancing operational efficiency, mitigating environmental impact, and fostering inclusive growth. In this respect, recent studies have shown that the use of AI is associated with improved carbon efficiency and increased productivity in the tourism sector. These relationships can be considered as long as the right institutional quality and digital infrastructure are in place. At the micro level, AI-driven applications, such as food waste monitoring, energy optimization, and innovative mobility solutions, can directly contribute to reducing emissions and promoting the sustainable use of resources. At the same time, other studies emphasize the rapid growth of AI applications in tourism and categorize technologies ranging from recommender systems to generative AI. These works also examine how these technologies align with the United Nations Sustainable Development Goals. At the same time, significant risks remain, including rebound effects, redistribution through overtourism, algorithmic biases, and labor displacement. International organizations emphasize that realizing the sustainability potential of AI requires sound governance, ethical safeguards and responsible data architectures. This paper examines the assertion that, although AI has the potential to transform innovation and sustainability in tourism, urgent research and policy priorities include the rigorous determination of causality, a system-level assessment of rebound effects, and the development of governance frameworks

INTELLIGENT SYSTEM FOR THE ASSESSMENT OF A COMPANY'S FINANCIAL PERFORMANCE

by Ana Tănăsescu | Petroleum-Gas University of Ploiești, Faculty of Economic Sciences

The main objective of a company is to maximize its value, namely to increase the wealth of its owners, an objective pursued by both managers and shareholders. Therefore, in order for them to develop and substantiate effective strategic decisions, it is important to perform an accurate assessment of the company's financial performance.

The economic and financial analysis serves to diagnose the state of a company and to determine the qualitative level of its performance. Moreover, economic and financial analysis is the tool used by companies to identify their strengths and weaknesses, taking into account the resources they possess.

Financial performance analysis is a component of economic and financial analysis and is based on the income and expenditure budget, the balance sheet and its annexes, the management report, etc.

The rapid progress in the field of artificial intelligence and information and communication technologies, as well as the impact of the COVID-19 pandemic, have contributed to the intensification of digital transformation adoption within companies, making digitalization an immediate priority for them.

This article presents an ontology-based intelligent system for the assessment of a company's financial performance.

Initially, the methods and techniques employed in economic and financial analysis are described, as well as the main ratios utilized to ascertain a company's creditworthiness.

Next, the process of building the ontological model for the assessment of financial performance using the Protégé ontology editor is presented. The ontological model consists of 48 classes: eight abstract classes (Ratio, Activity_Ratio, Efficiency_Ratio, Liquidity_Ratio, Dividend_Policy_Ratio, Profitability_Ratio, Risk_Ratio, Solvency_Ratio) and 40 concrete classes (for example, Company_Type, Company_Valuation, Current_Liquidity, Debt_Ratio, Return_on_Equity, etc.). Each of the 48 classes contains properties that describe the internal structure of the classes (for instance, address, assessment_year, ratio_category, share_capital). Some classes include Instance properties in their structure that ensure links to other classes. The development of the ontology also incorporated the stage of creating instances for the 40 concrete classes, as well as preparatory steps, such as modifying instance input forms and setting the display slots. The intelligent system for the assessment of financial performance was built using the Java Expert System Shell (Jess) and the Jesstab plugin of the Protégé ontology editor, which ensures the mapping of the ontology instances into Jess facts. This system has two components (the fact base and the rule base) organized

into five modules.

The fact base of the intelligent system comprises all three categories of facts specific to Jess: ratio unordered facts, for which a template must be defined, ordered facts, which are used to chain the rules across the five modules (data-entry, currentliquidity, interestcoverageratio, score, totalscore), and shadow facts, obtained by mapping the instances of the 40 concrete classes of the ontology built in Protégé.

The rule base contains a set of rules methodically organized into five modules. These modules are designed to prevent rule conflicts, enhance rule management, and even control rule execution. Through the five modules, the system ensures the collection of data from the user (the company name and the assessment year), the mapping of ontology instances corresponding to the company's ratios and the assessment year specified by the user, and the addition of ratio unordered facts to the fact base. It also performs the assessment of the value of each ratio and the assignment of a score, the calculation of the company's total aggregated score, and the display, based on this score, of a message regarding the financial performance of the analysed company.

The originality of the application proposed in this paper stems from the fact that it can be easily implemented in any company that needs to assess its financial performance, thereby enabling real-time analysis of its primary creditworthiness ratios.

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THE EVOLUTION AND IMPACT PATTERNS OF AI MODEL SHARING ON HUGGING FACE: A LARGE-SCALE ANALYSIS OF 2.11M MODELS

by Bucur Cristian | Bogdan Tudorica | Petroleum-Gas University of Ploiesti, Romania | Petroleum-Gas University of Ploiesti, Romania

This paper presents a comprehensive quantitative analysis of 2,110,127 artificial intelligence models hosted on the Hugging Face platform, with the aim of characterizing the factors that determine the success of models, the structure of the ecosystem, and emerging trends in sharing and usage practices. The study is based on a dataset with 19 attributes per model, including information about the author, number of downloads and ratings, library used, task type (pipeline), and metadata richness (tags, storage formats, compatibility). The statistical and comparative analyses performed highlight essential relationships between model characteristics, the degree of discovery and adoption by the community, and the major directions of evolution of the entire ecosystem.

The results show that the success of models on Hugging Face is multifactorial and determined by three main dimensions: technical capability, readiness for implementation, and visibility through metadata. Models with richer tag descriptions and explicit pipeline statements were found to be much more likely to be downloaded and rated. The correlation between downloads and likes is moderate ($\rho \approx 0.43$ on a logarithmic scale), indicating that popularity through usage and community recognition through likes reflect different dimensions of success. While frontier models, such as state-of-the-art generative models, attract a disproportionate number of likes, practical models focused on everyday tasks (classification, sentence similarity) accumulate large volumes of downloads, suggesting a clear differentiation between "likes" and "utility."

At the ecosystem level, the platform is dominated by the Transformers library, but also by specialized packages such as sentence-transformers, timm, diffusers, or pyannote-audio, each performing in their own niches. Analysis by task category shows that text generation reigns supreme, followed by text classification and text-to-image. However, specialized tasks, although less numerous, have a high average download rate, which highlights their practical relevance. Another major trend is the transition from text-only models to multimodal and production-oriented models, with a noticeable increase in labels associated with images, speech, or conversational flows.

Analyses of model size show that the vast majority fall below the 7 billion parameter threshold, reflecting the prevalence of reduced variants, efficient fine-tuning, and adapters. However, large models, with over 13 billion parameters, enjoy a higher number of downloads and ratings, indicating a correlation between capacity scaling and adoption. A performance sweet spot has been identified in the 13–30B and 70B+ ranges, where models manage to combine advanced capabilities with practical implementation.

A consistent finding concerns the importance of metadata. Tag richness is the strongest predictor of success, confirming that well-documented and indexed models are easier to find and reuse. Pipeline declarations increase clarity of intent and optimize discovery through search. Similarly, the presence of compatibility and format tags (safetensors, gguf, endpoints_compatible) is disproportionately high in the decile of models with the most downloads, signaling the community's focus on safety, portability, and inference efficiency. This orientation confirms the ecosystem's maturation toward best practices for standardized distribution and implementation.

Author-level analysis shows that high productivity, correlated with metadata clarity and consistency, favors total downloads. However, the lack of complete author data introduces a degree of uncertainty in the interpretation of the results. In terms of emerging patterns, tags associated with multimodality and conversational agents are becoming increasingly common, indicating future directions for development. At the same time, standardized formats and quantized versions are being rapidly adopted, confirming that ease of use and cross-platform compatibility are decisive factors in the adoption process.

From a practical perspective, the study offers clear recommendations. For authors, it is recommended to use at least 10 high-quality tags, include pipeline_tag and compatibility tags, and clearly document hardware requirements, scope, and limitations. Also, providing quantized variants and usage examples facilitates rapid integration by users. For platform administrators, priorities should include encouraging metadata structuring through templates and automated checks, highlighting compatibility indicators in searches, and developing longitudinal analyses to track impact and reproducibility.
However, the analysis also has limitations. The lack of temporal fields (created_at, last_modified) reduces the possibility of conducting time-series studies, and the use of proxies, such as extracting parameter size or version labels, can introduce biases. In addition, success metrics based on downloads and ratings are imperfect and do not fully capture the scientific or applied value of a model, where additional sources such as citations or downstream performance metrics would be necessary.

In conclusion, the analysis of over two million models demonstrates that success on Hugging Face is determined by the interaction between the technical capabilities of the models, their readiness for implementation, and the visibility provided by metadata. The ecosystem has shifted from a predominantly textual orientation to a diverse landscape with an emphasis on multimodality and production use. These results provide valuable guidance for authors and platform curators and open up perspectives for future research based on longitudinal data and more comprehensive impact metrics.

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EXPLORING THE IMPACT OF AI ON ONLINE SHOPPING: A SURVEY STUDY

by Florentina Alina Toader | Petroleum Gas University of Ploiesti

Artificial Intelligence (AI) is transforming e-commerce by changing how consumers interact with digital platforms and how businesses approach engagement, personalization, and growth. Over the past decade, AI has moved from experimental features to essential tools in online shopping. Technologies such as recommendation engines, dynamic pricing, and chatbots now enable retailers to offer personalized suggestions, optimize pricing and inventory in real-time, and provide immediate customer support. These advances streamline shopping, improve efficiency, and enhance customer satisfaction. However, AI adoption also raises concerns about trust, transparency, fairness, and the ethical use of personal data.

This study addresses these concerns by presenting survey results from 102 respondents representing diverse demographics. The questionnaire focused on three areas: demographic characteristics, online shopping behaviors and familiarity with AI features, and attitudes toward specific AI applications such as product recommendations, urgency messaging, and dynamic pricing. By analyzing both behavioral and attitudinal data, the research explores how demographic differences affect trust and acceptance of AI in digital marketplaces. This approach offers a comprehensive view of consumer perspectives and identifies key factors influencing attitudes toward AI.

The analysis used a multi-stage methodology. Descriptive statistics summarized demographic distributions and shopping behaviors, providing a baseline profile. Regression analyses identified factors predicting consumer trust and acceptance of AI in e-commerce. Multiple linear regression was used to assess continuous outcomes, such as trust in AI recommendations, while logistic regression evaluated categorical outcomes, including preferences for AI versus human recommendations. Independent variables included demographic factors, shopping frequency, and attitudes such as privacy concerns, perceptions of fairness, and perceived usefulness of AI.
Model fit was measured using R^2 for linear regressions and pseudo-R^2 for logistic regressions, with significance set at 0.05. This structure allowed for a thorough assessment of patterns and relationships between consumer attributes and perceptions. The results reveal both enthusiasm for the benefits of AI and skepticism about its risks. Most respondents agreed that AI-generated recommendations improve product discovery and online shopping efficiency. Dynamic pricing and urgency messages were also found to be effective in enhancing engagement. However, concerns remain about intrusive advertising, potential misuse of personal data, and algorithmic bias. Trust in AI systems was consistently lower than in human representatives, underscoring the challenge of establishing credibility and emotional reassurance in automated interactions.

The study also highlights shared expectations for governance and ethical oversight.

Respondents across demographics consistently supported regulations to ensure transparency and data protection. Many called for greater openness about algorithm operations and stronger consumer rights, reflecting a view of consumers as both users and stakeholders in e-commerce ethics.

These findings align with broader debates in AI governance, suggesting that sustainable AI adoption depends on striking a balance between innovation and social responsibility.

In conclusion, this research provides empirical insights into consumer perceptions of AI in e-commerce, highlighting both the opportunities and challenges for its responsible implementation.

While AI has strong potential for personalization, efficiency, and growth, unresolved concerns about privacy, fairness, and trust remain significant barriers. For businesses, successful AI adoption requires transparency, accountability, and a user-centered design approach. For policymakers, the findings underscore the importance of regulatory frameworks that safeguard consumer rights and foster innovation. Integrating ethical considerations into decision-making enables organizations to realize AI's benefits while maintaining consumer trust and supporting sustainable digital marketplaces.

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TAXONOMY AND CHARACTERISTICS OF EMERGING INFORMATION TECHNOLOGIES

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The contemporary digital era is marked by the rapid emergence of Emerging Information Technologies (EITs), defined as digital innovations in the early stages of development or adoption that have the potential to drive major shifts in existing economic and social structures. These technologies are distinguished by their profoundly innovative nature, accelerated evolution, and capacity to transform entire fields of activity. Although many of their applications are not yet fully functional or widespread, the direction they establish and the transformations they herald give them an increasingly visible role in the technological landscape. Classic examples of EITs include Artificial Intelligence (AI), the Internet of Things (IoT), blockchain, Augmented and Virtual Reality (AR/VR), smart robots, and Quantum Computing.

The primary aim of this analysis is to better understand the complex ecosystem of EITs by providing a structured classification. To achieve this, the study classifies these innovations from two essential perspectives: first, the technological paradigm—the basic principle or technical mode of operation that sustains their functioning; and second, the primary domain of application—the sector or industry where they have a major impact. Furthermore, a critical goal is to distinguish between technologies that are still early in the adoption cycle and those that have already reached maturity, having moved beyond the emergence threshold into widespread usage.

To accomplish this goal, the methodology adopted utilizes a structural and descriptive taxonomy. The analysis first organizes EITs into six distinct categories based on fundamental mechanisms and concepts: Network-Based Technologies (communication and connectivity), Data-Driven Technologies, Sensor-Based (Cyber-Physical) Technologies, Interactivity-Based Technologies (human-machine interface), Distribution-Based Technologies (distributed and decentralized systems), and Emergent Computational Paradigms (new computational models). This systematic grouping allows for the identification of common features among different technologies that develop around shared operating principles.

Subsequently, the framework examines the concrete application and maturity of these technologies across five key sectors: health, industry, education, transport, and governance (including smart cities). This comprehensive approach allows the study to assess how the highly varied EITs contribute to different sectors and how their maturity level varies depending on the application domain.

The structural analysis revealed that the technological ecosystem is highly interconnected,

with EITs frequently relying on and reinforcing one another. Within the Network-Based category, IoT is foundational, integrating physical devices capable of collecting and transmitting real-time data. This is supported by infrastructure like 5G, which offers high transfer speeds and reduced latencies crucial for autonomous vehicles or robotic telemedicine. Looking ahead, 6G promises even higher performance, potentially reaching terabits per second.

Data-Driven technologies are central to the transformation. Artificial Intelligence (AI), including machine learning and deep learning, learns from vast datasets to perform tasks that mimic human intelligence, such as visual recognition or medical diagnosis. Complementary to AI is the Digital Twin, a virtual replica of a physical object that receives real-time data from sensors for simulation and optimization.

The findings concerning maturity and adoption show a clear stratification of EITs. A significant segment has already reached maturity: Cloud Computing is integral infrastructure, utilized by over 94% of global companies, and IoT is widely adopted, with nearly 20 billion devices connected in 2023. Applied, specialized AI is also mature and widely used for data analysis and decision automation across various sectors.

However, other technologies remain in the emergent or transition phase. Blockchain, after a period of intense public interest, is finding stable applications in areas like finance (CBDC) and digital identity. Similarly, AR/VR is primarily adopted in specialized niches like training simulations for surgeons or pilots. Edge Computing, which brings data processing closer to the source for critical low-latency applications like autonomous vehicles, is also only beginning widespread adoption.

At the most nascent and experimental edge of the spectrum lies Quantum Computing. Although it holds vast potential to solve complex problems exponentially faster than classical computers (e.g., molecular simulation for drug discovery), the technology still lacks clear commercial applications and faces significant unresolved technical barriers, such as qubit fragility and scalability.

In terms of sectoral impact, the analysis confirmed that EITs are driving global structural changes: Industry 4.0 relies on Industrial IoT (IIoT) for predictive maintenance, a solution already adopted by over 62% of industrial companies. Transportation is being revolutionized by autonomous vehicles, which combine sensors, AI, and 5G V2X communication. In governance, technologies like the governmental cloud and AI for fraud detection are streamlining public services, with blockchain being applied for digital identity and online voting in pioneering countries like Estonia.

In summary, the development of EITs is sustained by a virtuous cycle generated by the synergy between technological progress, market demands, social pressures, and public policies. Understanding this structural evolution, from fundamental operating principles to varying sectoral maturity, is essential for researchers and decision-makers in both the

economy and public administration to proactively anticipate and adapt to the ensuing waves of innovation.

INSURANCE PRICING ANALYSIS USING RANDOM FOREST REGRESSION

by PATRASCU AURELIA | Petroleum-Gas University of Ploiesti

The insurance industry is fundamentally built upon the ability to estimate future risks and to set premiums that are fair, competitive, and financially sustainable. The process of establishing premium levels is referred to as insurance pricing or rate making. Pricing serves as a delicate balance between covering the expected cost of claims and ensuring profitability for insurers, while also remaining attractive to policyholders. Traditionally, insurance pricing has been carried out using actuarial methods such as frequency-severity analysis, multiplicative rating factors, and Generalized Linear Models (GLMs). These methods are well established, relatively transparent, and are often favored by regulatory authorities due to their interpretability.

However, insurance pricing has shifted with the growing complexity of risks and the availability of large-scale datasets. Traditional models assume linear or simple relationships between risk factors and insurance costs. In reality, insured losses are shaped by complex, nonlinear interactions that classical actuarial techniques cannot easily capture. This gap has led to the adoption of machine learning methods, which can model complex dependencies, uncover hidden patterns, and improve predictive accuracy. Among these, Random Forest regression stands out for its robustness, ability to handle nonlinearities, and production of variable importance measures that aid interpretability.

To illustrate Random Forest in insurance pricing, we used a widely known dataset with 1,338 health insurance policyholder records. It includes demographic and behavioral features such as age, sex, body mass index (BMI), number of dependent children, smoking status, and region. The target variable is the annual insurance charge, representing the premium cost for the policyholder. The analysis aimed to identify key drivers of insurance charges and build a predictive model to estimate costs accurately.

Random Forest is an ensemble learning method based on decision trees. It builds multiple decision trees, each trained on random subsets of the data and variables. Predictions are aggregated, usually by averaging in regression tasks, which reduces overfitting and variance compared to individual trees. This approach allows the model to capture nonlinear relationships and complex interactions without explicit specification, unlike GLMs.

For the present analysis, categorical features (sex, smoker, region) were encoded numerically. The dataset was divided into training (80%) and testing (20%) subsets. A Random Forest Regressor with 300 estimators was trained on the data. Model performance was assessed using the Root Mean Squared Error (RMSE) and the coefficient of determination (R^2), which together provide measures of predictive accuracy and explained variance. Variable importance scores were extracted to evaluate the relative influence of each predictor on insurance charges.

The Random Forest model achieved an R^2 of approximately 0.87, indicating that 87% of the variance in insurance charges was explained by the predictors. The RMSE was about 4,558

USD, which is reasonable given the wide range of charges in the dataset (from roughly 1,100 USD to over 63,000 USD). These results demonstrate that Random Forest can accurately capture the complex structure of health insurance pricing.

Feature importance analysis showed clear differences in explanatory power. Smoking status was the most influential factor, accounting for 61% of the model's predictive power. This matches medical and actuarial knowledge, as smoking raises the risk of severe health conditions and increases expected healthcare costs. The next most important predictors were BMI (21%) and age (13%). Higher BMI is linked to obesity-related health risks, and older age is associated with higher medical expenditures. In contrast, the number of children (2%), region (1.4%), and sex (0.7%) contributed only marginally, suggesting that these variables have a limited direct impact on insurance charges.

These findings confirm that Random Forest can uncover and quantify the relative importance of different risk factors. The model captures nonlinear relationships, such as the non-proportional impact of BMI on charges or the interaction between smoking and age, which are difficult to represent in traditional GLMs. However, interpretability remains important. While Random Forest offers high predictive accuracy, it is less transparent than GLMs. For regulatory and customer-facing contexts, insurers may use hybrid approaches that combine machine learning with traditional actuarial models to achieve both precision and transparency.

This study highlights the potential of machine learning, specifically Random Forest regression, to enhance insurance pricing methodologies. Using demographic and behavioral variables, the model achieved strong predictive accuracy and identified smoking, BMI, and age as the main determinants of insurance charges. The results show how machine learning can complement actuarial techniques, enabling more granular and personalized pricing strategies.

In practice, insurers could use Random Forest models to improve pricing accuracy, provided adequate safeguards for interpretability and regulatory compliance are in place. As health-related data grows through telematics, wearable devices, and electronic health records, machine learning will play a central role in risk assessment and premium setting. Future research may combine Random Forest with explainability tools such as SHAP values to further bridge the gap between predictive performance and interpretability.

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THE ROLE OF THE EUROPEAN FRAMEWORK AND ESG FACTORS IN THE TRANSITION TO CLIMATE NEUTRALITY: DEVELOPMENTS, REGULATION AND IMPLICATIONS FOR THE BANKING SECTOR.

by Aurora Cojocariu | Romanian Academy, School of Advanced Studies of the Romanian Academy, Doctoral School of Economic Sciences, National Institute for Economic Research "Costin C. Kiriţescu", Institute of National Economy, Romania

The presentation offers a multidimensional analysis of global and European efforts to combat climate change, highlighting the shift from acknowledging the problem to taking concrete actions through the adoption of international standards and commitments. The focus is on the impact and implications of the 2015 Paris Agreement, which established the goal of limiting the increase in the global average temperature to below 2°C and ideally to 1.5°C. It further addresses major legislative initiatives of the European Union, such as the European Climate Law and the "Fit for 55" package, with emphasis on binding targets for decarbonization by 2030 and climate neutrality by 2050. The statistical analysis includes Eurostat data on SDG progress and education levels in EU member states, relevant for understanding the social and economic context of the green transition. Special attention is given to integrating ESG criteria into the strategy and regulation of central banks, reflecting the requirements set by the European Central Bank and the European Banking Authority. The main models of engagement and risk management by banking institutions are illustrated, underlining their essential contribution to the sustainable transformation of the European economy.

ENERGY EFFICIENCY IN THE ERA OF ARTIFICIAL INTELLIGENCE: MODERN APPROACHES TO REDUCING THE CARBON FOOTPRINT

by Ioan-Anton SĂVULESCU | Petroleum-Gas University of Ploiești

This study examines how the rapid growth of artificial intelligence, while driving digital transformation, is also creating new challenges for energy sustainability. Training large language models and deep neural networks demands enormous computational resources, often consuming electricity comparable to that of households or small enterprises. Such energy intensity not only raises costs but also contributes to significant carbon emissions, prompting concern about the long-term environmental impact of AI technologies. To address these challenges, the study highlights several promising strategies. Model compression reduces the size and complexity of algorithms, allowing them to run with fewer resources while maintaining accuracy. Adaptive training methods fine-tune the learning process, applying computation only where it is most needed. Hardware-aware optimization ensures that algorithms make the most efficient use of processors, GPUs, and specialized chips, minimizing wasted energy. Together, these approaches aim to create systems that are both powerful and energy conscious.

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TERRITORIES AS LABORATORIES: LIVING LABS AS INFRASTRUCTURES OF CO-CREATION AND SOCIAL INNOVATION

by Giusy Sica | Maria Palazzo | Alessandra Micozzi | Universitas Mercatorum | Universitas Mercatorum | Universitas Mercatorum

Living Labs (LLs) have become increasingly important in contemporary debates on innovation, providing real-world environments where experimentation, co-creation and knowledge exchange converge (Bergvall-Kåreborn et al., 2009). They represent an evolution from linear, technology-driven models of progress towards more complex ecosystems that integrate different actors and forms of knowledge (Schaffers et al., 2007). At the core of this approach is the recognition that innovation is no longer limited to laboratories or policy offices, but develops in everyday life, where communities themselves become proactive. Users are changed from passive recipients to active co-designers. Citizens, communities, businesses, research institutes and public administrations collaborate in iterative processes of ideation, prototyping and experimentation. Indeed, a critical dimension of this paradigm is the shift from public-private partnerships (PPPs) to public-private-people partnerships (4Ps) (ENoLL, 2020) The involvement of citizens as the "fourth helix" of innovation challenges hierarchical models of governance and highlights the need for shared management of resources and processes. This transition reflects a broader cultural shift: innovation is no longer perceived as the result of isolated specialist knowledge, but as the co-production of multiple perspectives that recognise the value of local identities and collective action.

Furthermore, the co-creation generates results that are socially relevant because embedded in the cultural and ecological values of the territory. In this way, LLs become catalysts for building innovation ecosystems defined by openness, inclusiveness and adaptability. Such ecosystems thrive on their ability to mobilise collective intelligence, distribute responsibilities among actors and build resilience by connecting local practices to wider networks. From this perspective, LLs can be understood as both technological and institutional innovations, capable of reshaping the norms through which governance itself operates. This orientation is strongly in line with the European strategies. From the Green Deal to rural development policies, stress the importance of place-based and people-centred approaches, highlighting creativity, cultural identity and social innovation as levers for resilience (European Commission, 2022).

An example is provided by the Vulture Regional Park in Basilicata, southern Italy. Although geographically specific, the pilot initiative launched within the Park exemplifies the principles discussed above. It aims to create four creativity centres that operate as interconnected rural LLs, each dedicated to a distinct dimension of co-creation: community engagement, cultural hybridisation, open science and creativity-driven entrepreneurship. The relevance of this case to the broader discussion on co-creation and innovation ecosystems consists in its methodological orientation rather than its geographical details. It

shows how LLs generate value not by producing isolated results, but by orchestrating processes of collaboration, trust building and collective ownership. The emphasis on cultural heritage communities and collaborative agreements further illustrates how LLs can contribute to institutional innovation by integrating governance into horizontal relationships between administrations and citizens (Council of Europe, 2005). Participation is not understood as consultation, but as collective authorship, creating the conditions for sustained engagement. However, the challenges are significant. Ensuring ongoing community participation requires resources, time and careful facilitation. Securing adequate funding from both public and private sources remains critical, particularly in rural contexts with limited institutional capacity. Governance must remain flexible and adaptable to manage the uncertainties inherent in participatory processes. These challenges highlight the transformative nature of LLs: by directly addressing issues of inclusion, legitimacy and resource mobilisation, they push innovation beyond technical outcomes towards deeper cultural and social change (Sica, 2022). The Vulture Regional Park initiative illustrates this potential, but the implications go far beyond the local scale. The true innovation consists in the model itself: a framework that transforms citizens into partners, institutions into facilitators and territories into living laboratories where technological, social and cultural dimensions converge.

In this way, LLs embody the shift from innovation as linear progress to innovation as a continuous, participatory and ecosystemic practice.

ARTIFICIAL INTELLIGENCE FOR DECENTRALIZED ORCHESTRATION IN THE PHYSICAL INTERNET: OPPORTUNITIES, BUSINESS TRADE-OFFS, AND RISKS IN ROAD FREIGHT LOGISTICS

by Fabrizio Benelli | Erdet Këlliçi | Franco Maciariello | Vittorio Stile | Universitas Mercatorum | Tirana Business University | Universitas Mercatorum | Universitas Mercatorum

The Physical Internet (PI) has been conceptualized as a disruptive response to inefficiencies and fragmentation in logistics. Through modularization, interoperability, and open hubs, PI envisions a hyperconnected and sustainable road freight ecosystem. Yet its realization critically depends on Artificial Intelligence (AI) as the principal enabler of decentralized orchestration. This paper develops a theoretical framework for AI-driven PI logistics. Our novelty lies in a unified orchestration lens that jointly tackles fairness, data-sharing governance, and cybersecurity in multi-agent PI systems at scale. We argue that orchestration will require multi-agent AI systems capable of decentralized load consolidation, routing optimization, and hub allocation. These agents interact with IoT-equipped vehicles and containers, generating high-frequency data streams for predictive modeling and adaptive decision making. Complementarily, blockchain infrastructures secure transactions, while smart contracts provide automated enforcement of collaborative agreements. We highlight implications for business performance: trade-offs between cost-to-serve, service-level adherence, and collaboration ROI must be considered alongside sustainability gains. Evidence from existing multi-agent last-mile simulations and large-scale PI pilot projects in France shows quantifiable improvements (e.g., reduced vehicle kilometers traveled, higher load factors), offering empirical support. Scenario KPIs such as ΔVKT, Δload factor, and fairness indices are proposed to assess impact. Nevertheless, embedding AI in PI road freight introduces challenges: (i) ensuring algorithmic fairness to protect SMEs, (ii) implementing robust data governance and interoperability frameworks, and (iii) guaranteeing cybersecurity and resilience against adversarial threats. To address these, we propose research propositions on scalable orchestration, governance for trustworthy data and algorithms, and risk mitigation strategies. A conceptual framework and architecture diagram will be provided to integrate technical, organizational, and governance perspectives. By outlining opportunities, business trade-offs, and systemic risks, this paper establishes a conceptual agenda for research and policy, aligned with the EU AI Act, digitalization, and green transition priorities.

REINFORCEMENT LEARNING FROM COMMUNITY FEEDBACK (RLCF): A NOVEL FRAMEWORK FOR ARTIFICIAL INTELLIGENCE IN SOCIAL SCIENCE DOMAINS

by Daniele Allega | Guglielmo Puzio | Universitas Mercatorum, LUISS Guido Carli | LUISS Guido Carli

The proliferation of Large Language Models (LLMs) in high-stakes social science domains—including law, economics, sociology, political science, and anthropology—presents a critical reliability crisis. Traditional alignment methodologies, particularly Reinforcement Learning from Human Feedback (RLHF), prove inadequate for these fields as they introduce subjective biases, lack epistemological rigor, and operate as opaque systems that fail the transparency requirements essential to scientific inquiry and democratic institutions. This paper introduces Reinforcement Learning from Community Feedback (RLCF), a novel paradigm designed to ground Artificial Intelligence in social science domains within a transparent, verifiable, and collaborative framework. Our primary aim is to demonstrate how RLCF overcomes current limitations by shifting from subjective preference optimization to community-driven, objective validation. We argue that this approach not only enhances the accuracy and reliability of AI in social sciences but also fosters transformative pathways for knowledge management, education, and interdisciplinary research across multiple domains of human society.

The RLCF framework employs a mathematically grounded methodology that diverges significantly from traditional RLHF. Our multi-faceted architecture captures the inherent complexity of social science reasoning through four integrated components. First, the dynamic authority scoring system revolutionizes expertise recognition in interdisciplinary contexts. Unlike static annotator panels, RLCF implements a dynamic model where contributor influence becomes a function of baseline credentials, historical track record, and recent performance across domain-specific tasks. This ensures expertise is continuously earned through demonstrated competence and peer validation, creating a meritocratic ecosystem that rewards genuine domain knowledge whether in empirical research, theoretical analysis, or applied policy work.

Second, the framework addresses epistemic pluralism through uncertainty-preserving aggregation. Recognizing that social science reasoning involves multiple valid interpretations rooted in different methodological and theoretical frameworks, we utilize an uncertainty-aware aggregation algorithm based on normalized Shannon entropy. When expert disagreement surpasses a configurable threshold, the system preserves and structures this dissent as valuable epistemic information. This dialectical preservation maintains the legitimate diversity of approaches characterizing sophisticated analysis in fields where competing paradigms—whether quantitative versus qualitative methodologies, structural versus agency-centered theories, or macro versus micro perspectives—offer equally valid analytical frameworks.

Third, community-driven validation and governance mechanisms operate through a modular architecture supporting diverse tasks including data analysis, hypothesis testing, literature synthesis, and predictive modeling. Feedback is collected from broad communities of researchers, practitioners, and domain experts, ensuring multiple disciplinary perspectives inform system development. The process is governed by transparent constitutional principles embedded in the system's architecture, ensuring updates remain aligned with foundational goals of scientific rigor, methodological transparency, and interdisciplinary collaboration across all social science applications.

Fourth, to counteract disciplinary silos and methodological dogmatism, the framework incorporates a probabilistic Devil's Advocate assignment model. This mechanism actively encourages challenging dominant paradigms and methodological assumptions, strengthening the critical evaluation process and ensuring even widely accepted theories undergo rigorous interdisciplinary scrutiny.

While the RLCF framework is currently in the architectural phase pending full-scale implementation, its design is grounded in clear, testable hypotheses applicable across social sciences. We have developed a comprehensive evaluation framework to measure performance against traditional RLHF-based systems once deployed. We project that RLCF's unique features will yield substantial improvements across key dimensions critical to social science research.

Expected outcomes include significantly enhanced analytical accuracy and methodological rigor across disciplines. Unlike RLHF systems optimizing for plausibility or user preference, our model prioritizes verifiable expertise and rigorous methodological reasoning whether applied to econometric models, ethnographic interpretations, or sociological theories. Performance will be measured against established benchmarks in each discipline, where we expect RLCF to produce more nuanced analyses reflecting both empirical complexity and theoretical sophistication. The framework should achieve superior uncertainty calibration, establishing reliable correlation between stated confidence and actual accuracy. By explicitly modeling expert disagreement through uncertainty-aware aggregation, confidence levels will better reflect the true epistemological status of social science questions, acknowledging areas where disciplinary consensus exists alongside legitimate methodological disputes.

Additionally, we anticipate substantial reduction in systemic bias through proactive measures embedded in the system's design. We expect significant decreases in bias scores when measured by our multi-dimensional detection framework covering ideological, methodological, cultural, and geographical biases. This improvement stems from the system's transparency, diverse community feedback inclusion, and dialectical pressure from cross-disciplinary challenge mechanisms.

The RLCF framework represents a paradigm shift in AI alignment for social science domains. By incorporating social science epistemology directly into its technical

architecture, it creates pathways for developing AI systems that are computationally powerful yet methodologically rigorous and scientifically accountable. This approach opens new frontiers for interdisciplinary research, evidence-based policy making, and democratizing access to sophisticated analytical tools. We believe this research establishes foundations for sustainable AI ecosystems in social sciences, creating digital infrastructure that advances human understanding of society while respecting the methodological pluralism inherent in social scientific inquiry.

CULTURE MINING: UNLOCKING INNOVATION THROUGH PEOPLE ANALYTICS IN DIGITAL WORKPLACES

by Behzad Mohamadian | Marzieh Tahmaseby | University of Tehran | University of Tehran

Innovation in digital workplaces depends not only on technology but also on the cultural dynamics that shape collaboration and creativity.

This study introduces the concept of *culture mining* as a novel approach to applying people analytics for fostering innovation by uncovering and shaping organizational culture.

A structured literature review is conducted to classify four types of people analytics (descriptive, diagnostic, predictive, and prescriptive) and develop a conceptual framework that links these analytics to cultural enablers of innovation.

The framework demonstrates how different levels of people analytics can be systematically applied to identify cultural barriers, predict innovative capacity, and guide interventions that strengthen innovation-oriented behaviors in digital workplaces.

This paper extends the scope of people analytics beyond traditional HR functions by positioning culture as a measurable and designable asset, offering a cutting- edge perspective on leveraging data-driven insights to unlock creativity and innovation in the digital economy.

URBAN-RURAL INTEGRATION AND LANDSCAPE SUSTAINABILITY

by Simona Andreea Apostu | Maria Palazzo | Bucharest University of Economic Studies | Universita Telematica Universitas Mercatorum

Landscape patterns imply complex interactions, both social and ecological. In this context, the urban-rural integration presents an important role. Nevertheless, the relationship between the landscape sustainability and the integration between areas remain understudied. The paper main objective is to examine if the urban-rural integration significantly influence the landscape sustainability in case of Europe. Thus, we analyzed indicators reflecting urban-rural integraton and Net greenhouse gas emissions of the Land use, Land use change and Forestry in order to reflect the landscape sustainability. The study area is represented by the European countries for the period of time between 2014 and 2022. The dependence between the urban-rural integration and the landscape sustainability was explored through a time-fixed effects model. Our findings indicated that urban-rural integration exerts notable impacts on landscape sustainability, influencing migration, mobility and tourism.

IDENTIFICATION AND CLASSIFICATION OF DIMENSIONS AND INDICATORS OF SMART URBAN ECONOMY

by Mohammad Mirehei | Associate professor, Faculty of World Studies, University of Tehran, Tehran, Iran

The concept of a smart urban economy represents a contemporary and forward-looking framework that integrates sustainability, innovation, creativity, advanced technology, and environmental preservation to foster economic development in urban settings. This approach leverages scientific research and cutting-edge technologies to enhance economic competitiveness and efficiency while maintaining ecological balance, provided it aligns with specific spatial, temporal, and operational conditions. The primary objective of this study is to identify and categorize the dimensions and indicators of a smart urban economy.

In the initial phase, a comprehensive literature review was conducted to identify the dimensions and components of a smart urban economy using library-based research methods. Subsequently, a questionnaire based on the Kano model was designed and distributed among 114 urban economy experts in Tehran. Through this process, the identified indicators were classified into five categories: functional, basic, motivational, indifferent, and reverse. The findings revealed a total of 104 key indicators, which were grouped into five primary dimensions: 1) competitive economy, 2) knowledge-based, innovative, and learning economy, 3) digital and networked economy, 4) green economy, and 5) socially responsible economy.

Furthermore, the Kano model was employed to assess the impact of each of the 104 indicators on citizen satisfaction or dissatisfaction. The results provide valuable insights into the prioritization of these indicators and their role in enhancing urban quality of life and promoting sustainable development.

DOES ESG ALWAYS PAY? A COMPARATIVE ANALYSIS OF FIRM PERFORMANCE AND FIRM VALUE IN GERMANY AND SOUTH KOREA

by Fidelis ADITYAWAN | Felizia Arni RUDIAWARNI | University of Surabaya | University of Surabaya

This study investigates the impact of Environmental, Social, and Governance (ESG) performance on the financial and market performance of publicly listed companies in Germany and South Korea, and how ESG increases the value relevance of earnings. A quantitative approach is employed, analyzing data from companies listed on the German Stock Exchange and the South Korean Exchange between 2018 and 2022. The study utilized Ordinary Least Squares (OLS) regression models to assess the relationship between ESG scores and the performance metrics, while controlling for variables such as R&D intensity, leverage, firm size, and growth. The findings indicate a complex and varied relationship between ESG performance and corporate performance in the two markets. Contrary to the initial hypotheses, ESG performance did not lead to an increase in market performance (Tobin's Q) in either Germany or South Korea. Furthermore, in the South Korean market, higher ESG scores were associated with a decrease in financial performance. For German firms, the impact was mixed; ESG performance only showed a positive correlation with a higher profit margin, but not with ROA or ROE. Regarding the value relevance of earnings, the results also diverged. In South Korea, ESG performance did not enhance the value relevance of earnings[4]. In contrast, ESG practices in Germany were found to successfully increase the value relevance of earnings, suggesting that investors in the German market incorporate ESG factors into their valuation of companies' financial reports. In conclusion, this research highlights that the financial and market benefits of ESG practices are not universal and are significantly influenced by the specific regulatory and economic context of the country.

A FRAMEWORK FOR MEASURING STARTUP READINESS TO OVERCOME THE VALLEY OF DEATH IN THE ENTREPRENEURIAL ECOSYSTEM

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The "Valley of Death" is recognized as one of the most critical challenges in the lifecycle of startups, representing the gap between initial funding and sustainable revenue generation. This phase often determines whether a startup survives or fails. Despite the growing body of research on entrepreneurship and startup ecosystems, limited attention has been paid to systematically identifying the readiness factors that enable startups to overcome this stage. Considering the importance of this phenomenon for entrepreneurial ecosystems and policymakers, the aim of this research is to provide a framework for measuring the readiness of startups to survive the Valley of Death, with a specific focus on the entrepreneurial context of emerging economies. To achieve this, a rapid review approach was employed to examine the literature published between 2020 and 2025, analyzing studies related to startup survival, early-stage financing, resilience, and sustainability. The proposed framework includes three main dimensions: **resources**, **capabilities**, and **ecosystem support**. This framework can serve as a basis for both researchers and practitioners to evaluate the survival readiness of startups and design strategies to improve their chances of crossing the Valley of Death successfully.

AI APPLICATIONS IN RENEWABLE ENERGY FORECASTING AND MANAGEMENT

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The rapid global transition toward renewable energy sources has transformed the landscape of power generation across the European Union as well as in Romania, introducing both opportunities and challenges for energy systems. While wind, solar, and other renewable technologies offer significant environmental and economic benefits, their inherent variability, intermittency, and dependence on weather conditions pose substantial difficulties for accurate forecasting, grid stability, and efficient energy management, especially when paired to an aging infrastructure. Traditional statistical and physics based models have limitations in capturing the nonlinear and complex relationships present in renewable energy generation data, often resulting in operational inefficiencies. Artificial intelligence has recently emerged as a transformative solution to the complex issues energy systems face, providing advanced computational methods capable of processing vast datasets, detecting complex patterns, and generating accurate, real time predictions which help build a more resilient energy system. This paper provides a comprehensive overview of AI applications in renewable energy forecasting and management, examining a variety of techniques including machine learning algorithms, deep learning architectures, ensemble models, and reinforcement learning frameworks. The study explores the use of AI in short term, medium term, and long term forecasting of renewable energy outputs, highlighting the importance of predictive accuracy for operational planning, energy trading, and grid balancing, especially in a challenging environment such as that of modern day EU. In addition, the paper investigates AI-driven strategies for optimizing energy storage systems, enhancing demand-side management, and supporting the integration of distributed energy resources into smart grids. The study underscores the critical role of AI as an enabler of sustainable, efficient, and resilient energy systems, while providing insights into future research directions aimed at fully realizing the potential of AI driven renewable energy forecasting and management.

CONCEPTUALIZATION AND FORMULATION OF SOCIAL CITIZENSHIP BEHAVIOR (SCB) IN TOURISM INDUSTRY (CASE: CITIZENS OF ISFAHAN)

by Maysam Shafiee Roodposhti | Maryam Salmaninia | Somayyeh Hadi Marandegani | University of Tehran | University of Science and Arts of Yazd | University of Science and Arts of Yazd

This paper introduces the concept of social citizenship behavior (SCB) with the aim of designing its framework. In this regard, firstly, to identify the elements of social citizenship behavior, the literature of the research was analyzed and the researchers' theory about the components of the citizenship behavior was extracted from it. In the next step, based on available literature models and also based on valid native indexes, the model of appropriate social citizenship behavior was extracted and then analyzed by using a confirmatory factor analysis.The results indicate that the final model consists of 22 indexes as the constituent elements of social citizenship behavior. Also, the component of individual capabilities, otherness and legal requirements have the highest till the least correlation with social citizenship behavior. In the last step, by using the appropriate statistical tests, status of social citizenship behavior of citizens of Isfahan was evaluated. The results showed that the mean of all indexes was higher than the average of 4. Based on the analysis of the outputs of the research, it can be argued that the status of social citizenship behavior in Isfahan is at the desired level.

CO-CREATION AND INNOVATION IN TOURISM: LIVING LABS AND COLLABORATIVE ECOSYSTEMS FOR SMART DESTINATIONS

by Adrian Ungureanu | Petroleum-Gas University of Ploieşti

The article "Co-creation and Innovation in Tourism: Living Labs and Collaborative Ecosystems for Smart Destinations" aims to conduct an empirical analysis through the presentation of case studies or practical examples of living labs in tourism, both international and local (Romania), and by evaluating how the participation of real users (tourists, communities, authorities, entrepreneurs) influences the development and testing of innovative solutions.

The study employs participatory observation, involving direct engagement in living lab activities to observe the co-creation process, as well as documentary/content analysis of numerous reports, strategic plans, articles, and previous studies on smart destinations and living labs.

The article seeks to demonstrate how living labs can contribute to sustainability, resilience, and competitiveness, and to provide practical guidelines for implementing collaborative ecosystems, with recommendations for authorities, tourism operators, and local communities.

In the context of digital transformation and the pressures arising from socio-economic changes and sustainability challenges, the tourism sector faces the need for new governance models and destination development strategies. Co-creation and open innovation have emerged as essential mechanisms for generating added value, engaging not only traditional industry stakeholders but also local communities, research institutions, and visitors. Living labs and collaborative ecosystems provide an experimental and participatory framework where innovative, digital, and sustainable solutions for smart destinations can be designed, tested, and evaluated. By integrating emerging technologies, real-time data, and co-creation processes, these tools facilitate both adaptation to tourist demands and the strengthening of destination resilience and competitiveness.

This paper explores the role of living labs as innovation spaces in tourism, the operational mechanisms of collaborative ecosystems, and their impact on the sustainable and intelligent development of tourist destinations. The findings underscore the importance of cross-sectoral collaboration and participatory governance as key elements in shaping the tourism of the future.

A living lab in tourism represents an open and collaborative innovation environment dedicated to the development and testing of solutions for tourist destinations, actively involving all stakeholders: tourists, local communities, businesses, public authorities, and researchers. The

concept is based on the principle of co-creation, where end-users are not merely beneficiaries but active participants in the design, testing, and evaluation of products, services, or tourist experiences. This approach facilitates the identification of real needs, the adaptation of solutions to the local context, and the enhancement of destination relevance and attractiveness.

Living labs operate in real-world environments rather than abstract experimental spaces, allowing for direct testing of ideas within the specific context of the destination, including infrastructure, tourist flows, natural resources, and social dynamics. They combine interdisciplinary methods and emerging technologies—such as digital applications, sensors, augmented reality, and data analytics—with participatory and social approaches. In this way, innovative solutions can be developed to address complex challenges, including tourist flow management, environmental impact reduction, local culture promotion, and enhancement of visitor experiences.

Another essential aspect is the creation of a collaborative ecosystem, connecting various local and regional actors, facilitating the exchange of best practices, and fostering continuous innovation. This interaction supports both the sustainability and long-term competitiveness of destinations. Through living labs, tourist destinations become smarter, capable of responding rapidly to changes in tourist behavior as well as socio-economic and environmental challenges.

In conclusion, a living lab in tourism constitutes a strategic tool for participatory innovation, sustainable development, and the enhancement of destination attractiveness, emphasizing community engagement and real-time testing of innovative solutions to optimize tourist experiences and leverage local resources.

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THE INFLUENCE OF GREEN ACCOUNTING ON THE GREEN AND FINANCIAL PERFORMANCE OF COMPANIES

by Carmen Veronica Mincă | UPG Ploiesti

The paper captures various theoretical approaches regarding the importance of green accounting in the context of concerns about its environmental protection. It is noted that organizations are increasingly concerned over environmental accounting, since pollution raises important issues and it is necessary to adopt measures to protect the environment. The financial impact of environmental degradation is significant and the organizations must submit information on policies, objectives and environmental programs implemented, on expenses that they have engaged in this area, and environmental risks they face. Managers exert pressure to reduce the costs and to minimize the incidence of activity on the environment, due to pressure from shareholders, authorities, media, consumers, investors, employees, creditors, etc. Economic and fiscal instruments for environmental protection are applied to improve the quality of the environment, to reduce harmful emissions related to the process of production or consumption. Economically, taking into account the environmental parameters for the cost of service or production, enable companies to streamline their consumption of natural resources or energy, realizing substantial savings.

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FINTECH CHALLENGES – COMPLIANCE WITH EXISTING REGULATIONS

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The rapid expansion of financial technology (fintech) has introduced transformative solutions across payments, lending, investment, and other financial services. While fintech innovations drive inclusion and efficiency, they increasingly intersect with complex regulatory frameworks. This study aims to examine the key compliance challenges fintech firms face within existing regulations, focusing primarily on payment services but also extending to broader operational areas such as anti-money laundering (AML).

The study employs a conceptual and regulatory-based approach, analyzing current EU directives, European Banking Authority (EBA) guidelines, and supervisory practices. It evaluates regulatory alignment with emerging fintech business models, mapping the compliance burdens arising from the Payment Services Directive (PSD2/PSD3), Payment Services Regulation (PSR), AML directives, and cross-border licensing obligations. The analysis integrates insights from regulatory innovation initiatives, such as sandboxes and monitoring frameworks, to identify both obstacles and enabling factors.

Findings highlight persistent regulatory fragmentation, increased costs of compliance, and tensions between innovation speed and regulatory certainty. While payment services benefit from clear frameworks, evolving technologies such as embedded finance, decentralized platforms, and artificial intelligence raise legal ambiguities. Regulatory clarity on eligibility metrics, cross-border operations, and consumer protection remain essential to foster sustainable growth.

This study contributes by offering a holistic, regulation-centric perspective on fintech compliance, bridging payment-specific requirements with broader supervisory challenges. It outlines key policy considerations to balance innovation, consumer trust, and systemic resilience within an integrated European digital economy.

ECOLOGY AND LIVING LABS: PARTICIPATORY INNOVATION FOR SUSTAINABLE DEVELOPMENT

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Ecology, as the science of interactions between organisms and their environment, provides the theoretical and practical foundation for understanding the relationship between human activity and natural balance. In the face of global challenges—such as growing social inequalities, climate change, resource depletion, and ecosystem degradation—it is increasingly evident that economic development cannot continue without respecting the planet's natural limits. Thus, ecology stands at the core of the concept of sustainable development, which involves meeting present needs without compromising the possibility of a sustainable future for future generations.

Ecology provides the natural framework within which economic and social development can take place. Any sustainable development strategy must be grounded in ecological principles, in order to avoid surpassing the carrying capacity of ecosystems. At the same time, sustainable human development cannot be achieved without a healthy environment and a stable economic framework. This requires a profound transformation of how communities live, consume, produce, and relate to nature.

In parallel, the idea of sustainable development has evolved into a more comprehensive form—sustainable human development—which emphasizes not only environmental protection but also social equity, health, education, and active civic participation. In this context, ecology is not just a research field but also a guide for responsible action, based on respect for ecosystems and the sustainable use of resources.

To translate these principles into practice, concrete tools are needed to connect science, public policy, and citizens. One such tool is the „Living Lab"—an innovative concept involving the testing of sustainable solutions in real-life contexts, with the direct participation of those affected by the problems. Unlike traditional models where research is separated from application, „Living Labs" propose a collaborative and transdisciplinary approach in which communities become co-creators of change.

A remarkable example is „Climate Resilient Neighbourhoods", a project being piloted in Copenhagen that tests various climate adaptation methods through the creation of green and blue spaces in dense urban areas, with citizen involvement. By actively engaging all stakeholders, the initiatives become better adapted to real needs and more socially acceptable.

In Romania, the living lab concept is still in its early stages, but promising initiatives are emerging. One example is „Mureș Living Lab", developed in partnership with the University of Medicine in Târgu Mureș, which explores solutions for sustainable transport, recycling, and ecological education. Here, students, city residents, and local authorities collaborate to create effective local interventions, demonstrating the potential of these participatory innovation spaces.

Beyond living laboratories, good practices across Europe show that sustainable development also requires structural reforms, with the essential condition that any strategy be ecologically sound so as not to exceed the limits of natural systems. Also, sustainable human development cannot take place without a healthy environment and a stable economic structure.

For example, the transition to green energy represents a synthesis of all three dimensions: reducing environmental impact, creating green jobs, and ensuring equitable access to clean energy. Countries like Germany have invested heavily in technological education and in retraining workers from polluting industries, thereby ensuring a just transition. In Sweden, education for sustainable development is fully integrated into the school curriculum, contributing to the formation of ecological awareness from an early age. In Romania, initiatives in organic agriculture - such as cooperatives in Transylvania or "farm to fork" projects - demonstrate that sustainability can go hand in hand with local economies and consumer health.

Therefore, the relationship between ecology, sustainable development and living laboratories is deeply interconnected. Ecology provides the necessary knowledge to understand today's crises, sustainable development outlines the strategic objectives, and living labs offer a practical framework for testing and implementing solutions in an adaptive and participatory way. In a world undergoing profound transitions, these approaches are no longer optional—they are key to a viable future, where human societies evolve in harmony with nature.

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URBAN EXPERIMENTS AND CORPORATE POWER: WHO GAINS RESILIENCE IN SMART CITY PROJECTS IN MEDIUM-SIZED ROMANIAN CITIES?

by Brezoi Alina Gabriela | Simionescu Radu | Petroleum-Gas University of Ploiești, Faculty of Economic Sciences | Petroleum-Gas University of Ploiești, Faculty of Economic Sciences

In the era of accelerated E-business and Digitalization, "Smart City" strategies are adopted by medium-sized Romanian cities as a managerial solution for "green growth" and solving urban challenges. However, this paper argues that the vision is flawed by a technocratic approach: excessive reliance on ICT (Information and Communication Technologies) solutions undermines the democratic and environmental resilience of local administration. This dynamic represents a critical problem of strategic management and urban governance.
The research critically evaluates how digitalization solidifies the urban space as a digital marketplace (E-marketplace), amplifying the influence of corporate power from the global technology sector. The central objective is to expose the assumptions behind the notion of "green growth" through technology, demonstrating that Smart City projects effectively become urban experiments that favor private interests (telecom, IT) at the expense of local autonomy and social justice.
The methodology combines the analysis of public policy documents (EU strategies/NRRP) with an in-depth qualitative evaluation, based on case studies from the category of medium-sized cities in Romania. The analysis demonstrates that the use of digital solutions must be guided by a management framework that transcends mere cost optimization. The study offers a set of practical managerial and policy recommendations, showing how urban governance can be shielded from the risk of outsourcing essential functions and subordinating public objectives to corporate agendas from the E-business sphere.

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SYSTEM DYNAMICS AND DIGITAL GOVERNANCE FOR SUSTAINABLE HYDROPOWER: A CAUSAL LOOP MODEL OF THE CORUMBÁ IV RESERVOIR

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The transition toward a low-carbon and digitally integrated economy requires systemic tools capable of capturing the feedbacks between technology, ecosystems, and human activity. Hydropower, while often considered a clean energy source, produces complex socio-environmental interactions that challenge sustainable development. This study explores how digital system dynamics modeling can support adaptive environmental governance in hydropower operations, using the Corumbá IV reservoir in Central Brazil as a case study. Through the development of a causal loop diagram, we examine how anthropogenic pressures such as agricultural runoff, domestic effluents, and climatic variability affect the biogeochemical metabolism of the reservoir, influencing both ecological stability and energy production.

Hydropower generation represents a major component of Brazil's electricity supply, yet the construction and operation of large reservoirs transform natural ecosystems, alter water quality, and affect biodiversity. The Corumbá IV reservoir has experienced recurrent cyanobacterial blooms and nutrient enrichment caused by human activities in its watershed. These processes have direct operational consequences, such as corrosion and biofouling of turbines, which reduce plant efficiency and increase maintenance costs. Understanding these feedbacks is essential for integrating environmental and economic performance into a single systemic framework.

The study applied a qualitative system dynamics approach, combining expert knowledge with causal reasoning to build a conceptual model of the reservoir's functioning. The model integrates three interdependent subsystems: reservoir metabolism, water balance, and climatological forcing. The first subsystem represents the internal processes of photosynthesis, respiration, and decomposition that regulate oxygen and carbon dynamics. The second describes hydrological flows, storage capacity, and operational discharges, while the third accounts for climatic variables such as temperature, solar radiation, wind, and precipitation. Together, these subsystems form a holistic representation of how natural and human variables interact to define water quality and operational stability.

The analysis highlights that nutrient loading acts as a reinforcing mechanism that accelerates eutrophication, reduces dissolved oxygen, and increases sediment nutrient release, creating self-perpetuating cycles of degradation. Water level and residence time modulate these effects: lower volumes enhance mixing and oxygenation, whereas higher levels favor stratification and bottom anoxia. These dynamics demonstrate the sensitivity of water quality to both hydrological management and climate variability. The model also shows that operational issues—such as increased maintenance interruptions—emerge as

visible indicators of underlying ecological imbalances.

By linking ecological feedbacks to energy generation reliability, the causal loop model provides insight into key leverage points for intervention. Controlling nutrient inflows, managing aquatic biomass, and optimizing reservoir levels are critical to stabilizing the system. The model functions as a digital representation of the reservoir, enabling integration with real-time data from monitoring networks and decision-support platforms. This approach exemplifies how digital governance and system dynamics can jointly enhance sustainability by supporting transparent, adaptive, and data-driven management of water–energy systems. The Corumbá IV case demonstrates that sustainable hydropower depends not only on technological efficiency but also on a digital and systemic understanding of the ecological processes that sustain it.

LEVERAGING DIGITAL INNOVATION FOR SUSTAINABLE ECONOMIC GROWTH: GOVERNANCE AND POLICY PERSPECTIVES FROM EMERGING ECONOMIES

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Digital innovation, a beacon of hope, is increasingly recognized as a key driver of economic transformation, enabling productivity gains, new business models, and enhanced competitiveness. However, in emerging economies, the extent digital innovation translates into sustainable economic growth often depends on governance quality. This study investigates the interaction between digital innovation and governance in shaping growth outcomes, using panel data from 2000 to 2024 for the ECOWAS countries. Drawing on data from the World Development Indicators (WDI) and Worldwide Governance Indicators (WGI), we measure digital innovation through ICT adoption (internet penetration, mobile subscriptions), R&D expenditure, and digital service exports. At the same time, governance quality is assessed via government effectiveness, regulatory quality, political stability, and control of corruption. Employing fixed-effects and heteroscedastic panel standard error models, we estimate the direct effects of digital innovation on GDP per capita growth and the moderating role of governance quality. Preliminary findings suggest that digital innovation significantly contributes to sustainable development, but this effect is amplified in countries with stronger governance frameworks. Weak governance, in contrast, limits the economic returns from digital adoption, leading to underutilized infrastructure and reduced innovation spillovers. The results underscore the urgent need for complementary institutional reforms alongside digital investments, providing evidence-based guidance for policymakers aiming to harness digital innovation for inclusive and sustainable development.

THE INFLUENCE OF AVERAGE WAGE INCOME ON POPULATION DEPOSITS IN ROMANIA. CONSEQUENCE OF FINANCIAL EDUCATION OR REFLEX FINANCIAL BEHAVIOR?

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The article aims to investigate the relationship between the average income obtained by the resident population in Romania and total bank deposits by analyzing two data series (average wage earnings and household deposits) for the period 2007-2024. The research starts from the hypothesis that, the higher the average income, the higher the level of household deposits. In other words, the more money people have, the more they will be tempted to save. Both the average wage earnings and the population's deposits have increased steadily during the 17 years analyzed. The population has been prone to saving. Some points can be seen on the graph where the slope of the line changes, indicating periods of faster or slower growth in the volume of deposits. Between 2020 and 2021, the growth is steeper, one reason being the restrictions during the COVID-19 pandemic. Also, for the period March-August 2022, there is a stagnation in the volume of deposits, which may be determined by the increase in expenses as a result of the relaxation of restrictions imposed by the pandemic. The financial crisis of 2008 does not seem to have an influence on the trend. However, the growth trend may also be influenced by inflation, which could suggest that not all the growth is due to saving. In conclusion, we can say that the graph suggests an upward trend in population deposits during the analyzed period. This trend may suggest an improvement in the economic well-being of households and a positive trend in terms of financial education and saving. In the case of average wage incomes, the growth is also constant and the fluctuations are minor, possibly representing seasonal adjustments (especially in December of each year), economic or political (changes in tax legislation, increase in the minimum wage, etc.). Since 2016, there has been a steeper increase in average incomes. The trend for the 17 years analyzed is one of growth, which highlights economic growth and a potential improvement in the standard of living. The fact that both analyzed graphs show an increasing trend could be a sign of the increase in the degree of financial education of the population, saving being interpreted as a specific attitude of financially educated people. From the construction and analysis of econometric models (ARMA, VAR, ARDL, VEC) the conclusion emerges that a very large part of the variation in household deposits is explained by the average net monthly salary. The analysis establishes a direct and strong correlation between the average net monthly salary and household deposits, but this does not necessarily mean that the population's propensity to save is evidence of a high level of financial education.

EVALUATING THE SUSTAINABILITY OF FUNDING PROGRAMMES IN ROMANIA

by Suzana Turcu | Francisc Rainer Institute of Anthropology, Bucharest, Romania

Funding programmes are critical instruments for channeling resources toward sustainable development, particularly in EU member states. In Romania, European funds have acted as growth drivers since accession, yet sustainability remains contested due to persistent institutional constraints and uneven programme implementation.

Studies on EU Cohesion Policy reveal recurring challenges in administrative capacity and regional disparities. Research highlights the need for financial network architectures adapted to territorial needs, as well as the importance of social and financial inclusion in ensuring long-term effectiveness.

The analysis employs a case-study approach focusing on Romania, contextualized by European regulatory frameworks (Just Transition Mechanism, Horizon Europe) and international guidelines on blended finance. Both quantitative data (absorption rates, allocation patterns) and qualitative insights (institutional bottlenecks, inclusion mechanisms) are considered.

Romania's absorption rate for the 2014–2020 cycle reached ≈99.7%, above the EU average of ≈90%. This performance, however, was largely achieved through accelerated spending in the final stages, raising concerns about project quality and long-term impact. In the current 2021–2027 cycle, absorption stands at ≈16.3%, higher than the EU average of ≈11.4%, reflecting operational improvements. Under the Recovery and Resilience Facility, absorption is ≈31–33%, but only about 14% of milestones have been delivered, highlighting risks of delay and weak coordination. Structural weaknesses, such as limited administrative capacity and inconsistent stakeholder engagement, continue to undermine programme sustainability.

The sustainability of funding programmes in Romania depends on building institutional resilience, improving coordination across governance levels, and embedding inclusion mechanisms. While recent progress shows potential, without systemic reforms financial allocations risk inefficiency and reduced long-term impact.

FEDERATED HEALTH DATA PLATFORMS: TRANSFORMING CLINICAL SILOS INTO ECONOMIC ASSETS. BUSINESS MODELS FOR EUROPEAN DIGITAL HEALTH RESEARCH NETWORKS

by Fabio Liberti | Universitas Mercatorum

The convergence of healthcare interoperability standards and emerging data regulations presents an unexplored opportunity to reimagine clinical research networks through both technical and economic lenses. This paper proposes a theoretical framework examining how federated learning architectures, when integrated with OHDSI's OMOP Common Data Model and HL7-FHIR standards, could potentially enable sustainable business models within the European Health Data Space (EHDS) regulatory context.

Our investigation addresses three interconnected objectives. First, we explore how existing technical infrastructure investments in OHDSI networks and FHIR implementations might be repurposed for federated architectures, potentially reducing adoption barriers. Second, we design theoretical business models that balance economic sustainability with privacy preservation requirements mandated by EHDS. Third, we analyze the fundamental trade-offs between technical complexity, privacy guarantees, and economic viability in distributed healthcare networks.

The paper positions itself at the intersection of technical feasibility and economic sustainability, acknowledging that while federated learning technologies have demonstrated promise in research settings, their translation into economically viable platforms remains largely theoretical. We aim to contribute to the discourse on how technical standards might serve as economic enablers rather than mere compliance requirements.

Our approach combines architectural design with economic modeling, maintaining equal emphasis on both dimensions. From a technical perspective, we design a hub-and-spoke federated topology that leverages OMOP CDM v5.4 for semantic standardization and FHIR R5 APIs for interoperability. The architecture incorporates differential privacy mechanisms with varying privacy budgets (ε ranging from 0.1 to 10) and analyzes the resulting communication complexity, which follows $O(n \log n)$ patterns for n participating nodes.

The technical framework addresses key challenges including non-IID data distributions across institutions, Byzantine fault tolerance requirements for untrusted environments, and bandwidth constraints typical of healthcare networks. We map FHIR resources (Patient, Observation, Condition) to OMOP concepts, proposing a standardized transformation layer that could theoretically reduce integration complexity.

For economic analysis, we construct three conceptual business models without claiming empirical validation. The Data Cooperative model assumes collective ownership with revenue sharing proportional to data contribution. The Platform-as-a-Service model posits a

central operator charging subscription plus usage fees. The Innovation Marketplace model envisions a two-sided market connecting data providers with researchers. Each model is analyzed through theoretical cost structures and potential revenue mechanisms, though we acknowledge these remain speculative without real-world implementation.

Our privacy-utility analysis examines how differential privacy parameters affect both model accuracy and potential pricing strategies. We hypothesize that stronger privacy guarantees ($\varepsilon < 1$) might command premium pricing despite utility degradation, though this remains untested. EHDS Article 50 requirements are mapped to technical capabilities and associated cost estimates based on industry reports.

Our theoretical analysis yields insights that, while requiring empirical validation, suggest potential pathways for sustainable federated networks. Technical modeling indicates that leveraging existing OMOP implementations could theoretically reduce integration costs compared to proprietary approaches. The proposed FHIR-based coordination protocol demonstrates conceptual feasibility for managing federated learning workflows within existing hospital IT constraints.

Economic modeling suggests minimum viable network sizes of 10-20 institutions for achieving operational sustainability. Initial infrastructure investments are estimated at EUR 150-300K per institution, derived from market analysis rather than actual implementations.

The Data Cooperative model shows theoretical advantages for risk-sharing but faces governance complexity. The Platform model potentially scales better but concentrates economic benefits. The Marketplace model could generate highest returns but requires solving the two-sided market bootstrapping problem.

Our privacy-utility trade-off analysis reveals that moderate privacy settings ($\varepsilon = 1.0$) might result in approximately 5% accuracy degradation while potentially enabling new business models for sensitive data access. The framework positions EHDS compliance not as pure cost but as potential competitive advantage, though this hypothesis awaits market validation.

Communication overhead analysis suggests federated approaches become economically favorable beyond 20 participants, where coordination costs are offset by eliminated data centralization expenses. Yet practical factors like institutional readiness and regulatory interpretation could significantly alter these dynamics.

This conceptual framework contributes to understanding how technical standards and economic models might converge in healthcare data platforms. For practitioners, it suggests that existing OHDSI and FHIR investments need not be abandoned but could be leveraged for new federated paradigms. For policymakers, it illustrates how regulatory requirements like EHDS might be designed to encourage rather than hinder innovation.

The limitations of this theoretical work are acknowledged explicitly. Without real-world implementations, our economic projections remain speculative. Technical challenges may prove more complex than anticipated. Nevertheless, by examining the intersection of architecture and economics, we aim to advance the conversation beyond purely technical considerations toward sustainable healthcare data ecosystems.

Future work must focus on pilot implementations to validate both technical assumptions and economic hypotheses, transforming this conceptual framework into actionable insights for the emerging European health data economy.

THE IMPACT OF ORGANIZATIONAL BEHAVIOUR ON COMPANY PERFORMANCE

by Mihaela Otelea | UPG Ploiesti

In an increasingly dynamic and competitive business world, the success of an organization depends a lot on how human resources and employee relationships are managed.

Organizational behaviour represents the study of human behaviour within an organization, involving its understanding, anticipation, and management, through models and structures that aim to improve the work environment, the organizational performance and efficiency.

The quality of the communication system directly influences the efficiency of group activities, a clear and open communication supports the proper functioning of the team, while a poor communication can create confusion and conflicts.

Collective creativity plays an essential role, providing the necessary framework for generating new ideas, and contributing to the orientation of the organization towards innovation and long-term success. The creative groups often become sources of progress and adaptability towards the changes in the external environment.

Organizational behaviour is an essential factor for the success of an organization, having a direct impact on the way that the internal processes are managed, and on the overall financial performance of the company, the employees' attitudes and behaviours influence directly the efficiency and the financial results obtained within the company when the employees are motivated to work in a team, this thing leads to a better organization of the activities, and to the increase of the organizational performance. The unproductive behaviours lead to the negative effects of the organization, such as decreased efficiency, negatively affecting the company's financial results.

Similarly, the internal communication and organizational performance speaks about the fact that: "A positive organizational culture is essential for the development of the financial performance, since motivated employees contribute to the long-term success of the company". (Men, 2015).

Thus, maintaining a positive organizational behaviour not only improves the interpersonal relationships, but it is an essential factor in increasing productivity and achieving the organization's financial goals.

I consider that there are a number of concrete and realistic measures that companies could adopt to improve their organizational climate and, implicitly, their overall performance.

First of all, an internal anonymous feedback platform would allow the employees to express their ideas, grievances, or suggestions in a safe and constructive way. Such a channel would encourage honesty, and help the management make informed decisions

based on the real needs of the staff.

Another proposal aims to launch a short-term internal employee rotation program between different departments, called 360° experience. By temporarily participating in the activities of other teams, the employees can better understand the operational flows, the peer challenges, and contribute with ideas from a new perspective. This temporary change of roles would stimulate the organizational empathy, the collaboration between departments, and would develop a more united team spirit. At the same time, it would help the employees discover new skills, and it could represent a step towards their professional development.

Another essential aspect is the recognition of merits. It is not always necessary material rewards to motivate, sometimes a simple gesture of appreciation, a diploma, or a mention can have a strong impact on the employees' morale, these symbolic actions can create a positive climate and stimulate collaboration.

Mentoring between colleagues could facilitate the integration of the new employees, reducing the stress of the first months, and providing a real support from the most experienced ones. Such a system of mutual support strengthens the relations between the people, and contributes to the formation of a strong community.

Finally, the creation of a fund dedicated to the projects proposed by the employees themselves can be considered. Whether it improves the workspace, digitizing some processes, or organizing social events, such initiatives increase the sense of belonging, and give employees the opportunity to get actively involved in the life of the company.

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BIBLIOMETRIC ANALYSIS OF DIGITAL TRANSFORMATION IN PUBLIC ADMINISTRATION

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The rapid advancement of digital technologies has positioned digital transformation as a cornerstone for modernizing public administration, enhancing service delivery, and fostering citizen engagement. In Albania, e-governance projects, especially the e-Albania platform, show the government's dedication to using technology to improve public services. Despite significant achievements, such as improved accessibility and reduced bureaucratic inefficiencies, challenges like organizational resistance, digital literacy gaps, outdated legal frameworks, and data security concerns persist. This study adopts a systematic literature review methodology to evaluate the state of digital transformation in Albania's public administration. Through a comprehensive review of academic literature from sources like Scopus and WoS, the research identifies key drivers, barriers, and the broader impacts of e-governance initiatives on service delivery and citizen engagement. The findings highlight Albania's alignment with the EU Digital Agenda and its potential for fostering innovation and economic growth. Additionally, the study examines lessons learned from Albania's digital transformation journey, focusing on policy implications for addressing digital divides, enhancing institutional efficiency, and advancing inclusive governance. By synthesizing existing knowledge, this research provides actionable insights for policymakers and contributes to the discourse on digital transformation in transition economies.

MEASURING PERSONAL BRAND AUTHORITY IN THE DIGITAL AGE: SEARCH ENGINE RANKING, DIGITAL ECOSYSTEMS, AND THE VALUE OF INTANGIBLE ASSETS

by Elena Andreou | Unicaf University

In today's Web3-driven economy, personal brand authority has emerged as the most influential trust signal in the digital landscape. Search engines increasingly prioritize personal brand authority over traditional ranking factors, using it as a key indicator of credibility, reliability, and influence. Modern AI-powered tools can now quantify the power of influence, providing measurable scores that reflect an individual's or organization's authority online. These tools are likely to become essential, with business success and career growth increasingly dependent on such digital assessments. This paper examines how search algorithms evaluate authority and why professionals and business owners must recognize personal brand equity as a vital intangible asset. It argues that building authority requires both visibility and a strategic digital ecosystem composed of key digital assets. By understanding and managing these assets, individuals can enhance discoverability, establish trust, and sustain competitive advantage. The study also highlights conceptual approaches for measuring personal brand authority and underscores the necessity of integrating digital asset management into long-term professional and business strategies.

TAXATION IN THE DIGITAL AGE: CHALLENGES AND PROSPECTS FOR GREECE.

by Vydoura Vagia| Florou Giannoula | Democritus University of Thrace | Democritus University of Thrace

The transition to the digital economy and the emergence of new business models pose significant challenges for traditional tax systems. In the case of Greece, where a com plex and unstable tax framework prevails, the need for adaptation to the new techno logical and economic conditions shaped by the platform economy and dynamic innovation ecosystems is becoming increasingly evident.

This article examines the extent to which the existing Greek tax system either facilitates or hinders economic growth in the context of digital transformation. Through data analysis and a comparative review of international practices, the effectiveness of current tax policies, the competitiveness of the tax base and the potential use of digital tools to enhance transparency and tax compliance are assessed.

Based on these findings, an adaptive framework for tax reform is proposed, specifically tailored to the needs of the Greek economy, with the aim of enhancing innovation, broadening the tax base and ensuring sustainable growth. The study seeks to contribute scientifically to the ongoing dialogue on the formation of a modern, functional and supportive tax environment in the digital era.

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON LABOR PRODUCTIVITY IN SMALL AND MEDIUM-SIZED ENTERPRISES IN ROMANIA

by Cristu Andreea - Alice | Petroleum-Gas University of Ploieşti

The paper aims to investigate the impact of adopting artificial intelligence (AI) on labor productivity in small and medium-sized enterprises (SMEs) in Romania. In an economic context marked by the transition towards digitalization and the urgent need to adapt to rapid technological changes, the analysis seeks to highlight AI's role as a determinant factor for organizational efficiency, competitiveness, and sustainability. The study seeks to answer the following question: to what extent can AI implementation generate measurable increases in labor productivity in SMEs, and what are the main challenges associated with this process? The relevance of this objective is reinforced by the fact that Romanian SMEs face structural constraints such as limited access to capital, insufficient technological infrastructure, and uneven levels of digital maturity. Against this background, AI adoption is not merely a technological upgrade but a strategic necessity to ensure their survival and competitiveness in the European and global markets. The paper also aims to provide evidence-based insights that could guide both practitioners and policymakers in shaping strategies that enhance digital readiness.

The research relies on a combination of quantitative and qualitative methodology. On the one hand, a survey was conducted on a sample of SMEs active in various economic sectors in Romania, focusing on the level of digitalization, areas of AI application, and labor productivity indicators. On the other hand, semi-structured interviews with managers and experts were conducted to capture perceptions related to barriers and opportunities associated with AI implementation. Data analysis was carried out using descriptive statistical methods and regression models to capture correlations between AI use and labor productivity. To ensure the representativeness of the findings, the survey covered SMEs from diverse industries, including IT&C, retail, manufacturing, and services. The qualitative component added depth by capturing narratives of how SMEs negotiated the transition to AI, revealing both success stories and failed attempts. Triangulation of the two methodologies increases the robustness of the results and allows for the identification of sector-specific dynamics that would not emerge from a purely quantitative approach.

Preliminary findings highlight a positive correlation between the degree of AI integration and the increase in labor productivity. SMEs that use AI applications in areas such as data analysis, process automation, and customer relations report significant improvements in operational efficiency. Sectoral differences reveal that AI's impact is more visible in fields such as IT&C and services compared to traditional manufacturing industries. Specifically, SMEs that implemented AI-driven automation in administrative and repetitive processes

registered productivity increases of up to 25% within the first year. Furthermore, customer service departments using AI chatbots or predictive analytics tools achieved higher satisfaction scores and reduced response times. Conversely, in manufacturing, the benefits materialized more slowly, as integration required both technological adjustments and employee reskilling. The findings also suggest that firms with strong leadership commitment to digitalization tend to overcome resistance more effectively and report faster returns on investment. Moreover, the study highlights the importance of continuous training programs, as firms investing in upskilling their workforce experienced smoother adoption processes and reduced turnover.

The contribution of this study lies in its contextualized approach to the impact of AI on SMEs in Romania, a subject still little explored in the local literature. The paper provides an empirical perspective by combining quantitative and qualitative analysis, offering practical recommendations for managers and decision-makers. In addition, the study highlights the dynamics of the digital transition in the Romanian economy and outlines directions for the development of public policies aimed at supporting AI adoption in SMEs. Unlike studies focusing exclusively on large corporations or technologically advanced economies, this research emphasizes the vulnerabilities and strengths of SMEs operating in an emerging market. By shedding light on Romania's specific context, the paper enriches the broader debate on how AI can act as a driver of inclusive growth and reduce disparities between countries at different stages of digital development. Furthermore, the study formulates concrete policy recommendations, such as the creation of public-private partnerships for training programs, fiscal incentives for digital investments, and the establishment of AI innovation hubs tailored to SMEs. These proposals underline the practical relevance of the research and position it as a resource for long-term strategic planning in Romania's economic landscape.

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CIRCULAR BUSINESS MODELS IN THE DIGITAL TRANSITION ERA

by CRISTU ANDREEA - ALICE | Petroleum-Gas University of Ploieşti

This paper investigates how circular business models are reshaped and accelerated by the digital transition, in the context of sustainable economy and the pressures generated by climate change and globalization. The main purpose is to highlight the connections between emerging digital technologies and circular economy practices, with emphasis on their potential to generate added value and competitive advantages for organizations. At the same time, the study underlines the global relevance of these transformations, by situating them within the wider debates on the European Green Deal, the United Nations Sustainable Development Goals, and the rapid evolution of consumer expectations for responsible business conduct. This perspective helps demonstrate how the fusion between digitalization and circularity can influence long-term competitiveness, both at company and sectoral levels.

The research is based on a comparative analysis of international specialized literature, case studies regarding the implementation of circular economy in European companies, and a conceptual-analytical approach to the relationship between digitalization (big data, artificial intelligence, Internet of Things, blockchain) and sustainability. The methodological framework also includes an exploratory analysis of public reports published by the European Commission, the World Economic Forum, and national institutions, to better understand how digital policies and circular strategies intersect. By combining qualitative approaches with comparative methods, the paper ensures a balanced analysis between theoretical insights and practical applications. Furthermore, the methodology places emphasis on identifying success factors, obstacles, and replicable models of good practice, so that the conclusions can be relevant across different economic sectors.

Preliminary findings show that digitalization facilitates resource traceability, increases the efficiency of raw material use, optimizes supply chains, and supports new models of collaborative consumption. In addition, digital technologies contribute to the development of open business ecosystems, based on collaboration and co-creation between organizations, consumers, and communities. Challenges have also been identified, related to implementation costs, uneven regulations, and the low level of awareness among some economic actors. Moreover, the integration of digitalization with the circular economy can stimulate product and service innovation, leading to the creation of new value streams and greater organizational resilience in the face of market changes. The results also indicate that digital tools allow companies to collect and analyze real-time data on material flows, which can significantly improve decision-making processes. Another key result is the identification of industries-such as energy, automotive, and textiles-where digital circular business models are emerging most rapidly, due to strong regulatory incentives and

customer demand. At the same time, the research highlights the necessity of building partnerships between SMEs and large corporations, to bridge resource and knowledge gaps in the digital transition.

The paper makes an original contribution by integrating the two directions- circular economy and digital transformation-into a unified conceptual framework, capable of providing a theoretical and practical basis for the development of public policies and organizational strategies. The approach combines theoretical perspectives with applied examples, making it relevant both for the academic environment and for practitioners in the economic and managerial field. In this sense, the study also emphasizes the importance of cross-sectoral collaboration, where universities, companies, and public institutions can jointly accelerate the shift towards sustainable business practices. Furthermore, the research highlights the strategic role of education and continuous professional training in preparing future managers to design and implement innovative models that combine digitalization with sustainability. By linking conceptual innovation with real-world applications, the originality of this study lies in its capacity to act as a bridge between academic discourse and managerial practice. It opens new avenues for interdisciplinary research, particularly on how governance, technology, and business models converge to support sustainability.

This research opens opportunities for deepening the analysis of the impact of digitalization on sustainable business models and can guide companies in adopting more efficient and environmentally responsible strategies. Moreover, it draws attention to the importance of long-term monitoring and assessment of digital circular initiatives, to measure not only economic performance but also environmental and social impacts. By encouraging a holistic approach, the study lays the groundwork for future debates and collaborations at the intersection of economics, technology, and sustainability.

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ENTREPRENEURSHIP EDUCATION AND ITS ROLE IN STIMULATING INNOVATION IN THE ECONOMY

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A contemporary economy based on knowledge and innovation requires not only access to modern technologies but also appropriately prepared human capital. Entrepreneurship education, understood as the process of shaping attitudes, skills, and knowledge that foster economic activity, plays a key role in stimulating innovation. The aim of this article is to analyze the importance of entrepreneurship education in developing individuals' innovative competencies and its impact on economic dynamics. The study attempts to identify the mechanisms through which entrepreneurship education supports the creation and implementation of innovative solutions, as well as to identify barriers limiting its effectiveness. Hypotheses are formulated regarding the positive impact of entrepreneurship education on the development of creativity, problem-solving skills, and risk-taking, which consequently translates into higher innovation activity in the economy. Literature analysis and preliminary empirical research findings indicate that the practical nature of entrepreneurship education, its connection to the real market, and institutional support are key factors determining its effectiveness. The conclusions drawn from this study can form the basis for recommendations for improving educational programs and the state's innovation policy.

AI-ENHANCED BUILDING INFORMATION MODELING AND BIG DATA ANALYTICS FOR CIVIL ENGINEERING INNOVATION

by Vittorio Stile | Antonio Fontanella | Universitas Mercatorum | ISF - Ingegneria Specialistica Fontanella

The integration of Artificial Intelligence (AI), Building Information Modeling (BIM), and big data analytics is emerging as a critical enabler for the digital transformation of civil engineering. By combining predictive modeling, machine learning, and computer vision with large-scale data processing, BIM platforms can evolve into adaptive decision-support systems. This research introduces a prototype platform designed to optimize building design, resource allocation, and regulatory compliance, while simultaneously analyzing heterogeneous data sources generated throughout the construction lifecycle. The incorporation of big data analytics allows for the identification of patterns and correlations that enhance predictive accuracy and improve real-time monitoring. Preliminary applications in urban infrastructure projects demonstrate measurable gains in resource efficiency, risk mitigation, and project delivery times. Despite these promising results, broader empirical validation and sustained research funding remain essential to generalize findings across diverse construction scenarios. The study positions AI-BIM integration, supported by big data analysis, as a pivotal step toward intelligent, data-driven, and sustainable construction engineering.

STRATEGIC ROLE OF BUSINESS VALUATION IN GUIDING FIRMS THROUGH CRISIS CONDITIONS

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The numerous evaluation methods known today can address both the quantitative and the qualitative side, respectively both the patrimony and the financial performances: the yield and profitability of the beneficiary capacity of the economic entities concerned.

Whenever there are changes in the structure of the social capital, in the number of shareholders or associates, in the case of alienations, mergers, divisions and liquidations, in the case of determining the taxable masses, the evaluation is a relevant tool that can be used by the management of economic entities.

The objective of the present study is to establish the financial value for a group of economic entities, by using two evaluation methods. Given the limited access to the financial data of economic entities, the applied methods are aimed at calculating the net asset and determining the yield value for each individual business. The selected data are the data reported from the last four years and published on the website of the Ministry of Finance at www. mfinante.ro. The values of the calculations are compared with each other and their evolution over time is established. The selection of economic entities allows comparisons to be made within groups of five entities with a similar object of activity;

1.The financial data are extracted for a number of 25 economic entities, grouped by fields of activity. The selection is limited to five entities from five different fields of activity.

Financial data are public data, available for broad access to information. Internal details related to the activity of these economic entities are not directly known, nor are the specific factors that may influence the value of the business.

2. To establish the patrimonial values, the total asset is extracted, less the regularization component, after which the debts are deducted. The level of patrimonial value as a net asset is determined. The calculation model is a simplified model, which has the limitation of ignoring possible corrections for fixed assets, unaccounted and contingent liabilities, the fiscal incidence of the deactivation of advance expenses. Another limit arises due to the maintenance of indicators expressed in current prices, although the level of inflation in the analyzed period is high.

3. To establish the financial value, an annual yield value level is calculated. Reproducible profit is the annual one. A future evolution of profit without significant differences between years, for an indefinite period, is considered possible. The financial rates used in the calculation are estimated at 20% or 30% for each year considered and the same rates are used for each group of five economic entities. It is not considered

appropriate to use rates specific to each entity, given the anomalies that may occur. The same level of rates is the basis for determining the multiplier coefficient.

4. The study does not aim to determine a level of financial value by updating future cash flows, as long as cash flow forecasts of these economic entities are not available, the determination of goodwill is carried out by the inverse method, as the difference between the yield value and the net asset;

After completing the above steps, the following results are obtained:

- differences between the net asset and the yield value of the economic entities;

- economic entities in the same field evolve similarly over time;

- the pandemic period does not have the same impact in different fields of activity;

Starting from concrete results obtained by economic entities and reported through the mandatory annual financial statements, strategic information is determined that can be used by decision-makers in order to increase the performance of economic entities.

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ENTREPRENEURIAL MOTIVATION, RESILIENCE, AND TECHNOLOGY ADOPTION: EVIDENCE FROM ITALIAN WOMEN ENTREPRENEURS IN RESPONSE TO COVID-19 CRISIS

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The COVID-19 pandemic has posed unprecedented challenges to entrepreneurial activity, disrupting operations and increasing uncertainty across sectors. Women entrepreneurs, in particular, experience compounded vulnerabilities due to structural barriers, limited access to financial resources, and the ongoing challenge of balancing professional and personal responsibilities. Understanding the mechanisms through which female entrepreneurs navigate crises, maintain business continuity, and leverage innovative strategies is essential for informing policy, managerial practices, and support interventions.

This study examines the interplay between entrepreneurial motivation, self-efficacy, organizational resilience, technology adoption, and firm-level characteristics among Italian women entrepreneurs. The research tests four key hypotheses. H1 posits that entrepreneurs motivated by creative or innovative goals are more likely to adopt digital technologies. H2 investigates whether higher self-efficacy is associated with greater organizational resilience. H3 evaluates whether technology adoption contributes to resilience in response to external shocks. H4 assesses how firm-level characteristics and barriers encountered influence resilience outcomes. By integrating individual, behavioral, and structural dimensions, this study addresses a critical gap concerning adaptive strategies and digital engagement of women-led businesses in crisis contexts.

The conceptual framework draws on established theories of entrepreneurial motivation, resilience, and technology adoption. Entrepreneurial motivation encompasses intrinsic drivers, including the desire to create an ideal work environment, innovate, or pursue novel business opportunities. Self-efficacy captures the individual's perceived ability to effectively manage entrepreneurial challenges and implement adaptive strategies. Organizational resilience is operationalized as an ordinal index reflecting the diversity of strategies adopted during the pandemic, such as reorganizing operations, managing costs, exploring new markets, and integrating digital technologies. Technology adoption reflects the practical implementation of digital tools—ranging from e-commerce platforms to online communication systems—enabling operational continuity and innovation. Firm characteristics, including employee numbers, revenue, prior entrepreneurial experience, and barriers encountered, are included as covariates to account for contextual influences on resilience.

Empirical data were collected through a structured survey administered to 201 Italian women entrepreneurs. The survey captured demographic and professional background,

motivations for business creation, self-efficacy, and detailed information on adaptive strategies during the COVID-19 crisis. Motivational drivers were categorized to identify those oriented toward creative business initiatives, self-efficacy was measured using a five-point Likert scale, and resilience was coded as an ordinal index combining multiple adaptive responses. Technology adoption was treated as a binary indicator reflecting the implementation of digital solutions, and firm characteristics were included as additional explanatory variables.

Analytically, the study applies logistic regression, linear regression, and moderated mediation analyses using the PROCESS macro in SPSS. H1 is tested using logistic regression with technology adoption as the dependent variable and creative motivation as the predictor, controlling for firm characteristics. H2 is assessed with linear regression of resilience on self-efficacy, including covariates. H3 examines whether technology adoption predicts resilience, controlling for motivation, self-efficacy, and firm-level covariates. H4 evaluates the contribution of structural and contextual factors to resilience outcomes.

The results reveal several notable patterns. H1 is not supported: creative motivations do not significantly predict technology adoption after controlling for firm size, revenue, prior experience, and barriers. H2 also finds no significant association between self-efficacy and resilience, suggesting that while perceived competence may influence entrepreneurial behavior, it does not directly translate into measurable adaptive outcomes in this context. H3 shows a positive and significant effect: firms that adopted digital technologies demonstrate higher resilience, even when controlling for motivation, self-efficacy, and structural factors. H4 indicates that resilience is shaped by multiple organizational and contextual factors, with firms' structural characteristics and the barriers they encounter contributing to variations in their adaptive capacity.

This research contributes to the literature in multiple ways. It provides empirical evidence on the mechanisms through which women entrepreneurs respond to crises, emphasizing the critical role of digital tools in supporting resilience. It operationalizes resilience as a multidimensional, behavior-based construct, linking observable adaptive strategies to organizational outcomes. Additionally, it evaluates the impact of motivational and structural factors, offering a nuanced understanding of the interplay between individual capabilities and firm-level constraints.

The findings offer insights for policymakers, support organizations, and managers interested in fostering adaptive capacity and digital readiness among women-led businesses. Encouraging digital adoption emerges as a key pathway for resilience, while motivational and self-perceived competence factors alone may not suffice to generate adaptive outcomes. Structural and contextual factors, including firm size, revenue, prior experience, and barriers faced, also influence resilience, underscoring the need for targeted support strategies. The implications extend to the design of training programs, support policies, and initiatives aimed at strengthening entrepreneurial resilience and innovation capacity, contributing to more inclusive and robust entrepreneurial ecosystems.

INNOVATIVE OPEN BUSINESS MODELS AND PLATFORMS IN SCIENTIFIC PUBLISHING

by Ganna Kharlamova, Maria Naumova, Ganna Novikova | Taras Shevchenko National University of Kyiv

The scientific publishing industry is undergoing rapid transformation driven by digitalization, open science movements, and increasing demands for transparency, accessibility, and efficiency in knowledge dissemination. Traditional subscription-based models are being challenged by open access (OA) and open science frameworks that shift the economic and organizational foundations of scholarly communication. This report explores innovative open business models and emerging platforms in scientific publishing, with a focus on their sustainability, scalability, and impact on global research ecosystems.

The analysis begins with an overview of the limitations of legacy publishing systems, including high costs of access, unequal distribution of knowledge, and concentration of market power in a few large commercial publishers. These challenges have sparked global initiatives such as Plan S, UNESCO's Open Science Recommendation, and the FAIR data principles, which emphasize inclusivity, interoperability, and equitable participation in knowledge production. In this context, new business models are being developed to support open dissemination while ensuring financial viability for publishers, institutions, and researchers.

Among the most prominent models are:

- **article processing charges (APCs)**, which remain dominant but controversial due to inequities in author-side financing;
- **diamond open access**, where neither readers nor authors pay and costs are covered through consortia, universities, or public funding;
- **subscribe-to-open (S2O)**, a collective subscription model that converts journals to open access when funding thresholds are met.
- **community-owned publishing platforms**, such as institutional repositories, preprint servers, and university presses, represent decentralized approaches to democratizing scientific outputs.

Technological innovation further expands the potential of open publishing. Open-source platforms such as Open Journal Systems (OJS) enable cost-effective journal management [4], while AI-driven tools (Grammarly or Paperpal) enhance peer review, plagiarism detection, and metadata curation. Blockchain technologies are being piloted for transparent peer review, authorship verification, and copyright management. At the same time, integrated platforms are emerging that go beyond journals to include open peer review, open data, and open educational resources, creating holistic ecosystems of scholarly communication.

The transition to open models is not without challenges. Concerns persist regarding financial sustainability, uneven adoption across disciplines and regions, and risks of

predatory publishing. Nevertheless, successful cases illustrate pathways forward: SciELO in Latin America demonstrates the viability of cooperative regional platforms; Europe's OpenAIRE highlights the power of policy-backed infrastructures; and emerging alliances of university presses in Eastern Europe show how collaborative governance can drive innovation in local contexts. This study argues that innovative open business models are not only reshaping how knowledge is disseminated but also redefining the values of scientific publishing. By aligning with principles of openness, inclusivity, and equity, they provide a foundation for more resilient and globally interconnected research systems. Future directions should prioritize hybrid funding models, broader institutional support, and the integration of open platforms into academic evaluation systems to ensure their long-term sustainability.

Despite these advances, several challenges remain pressing. First, the sustainability of open business models depends on diversified funding sources, as overreliance on APCs creates barriers for researchers from low- and middle-income countries. The ScholCommLab examined commercial publishers' use of APCs by assembling price-list datasets (2015–2018; 2019–2023) and, in a study released last year, estimated that payments to the five largest publishers reached roughly US$2.5 billion in 2023. The evidence indicates that APCs play a crucial strategic role as price instruments rather than cost-based charges, with adoption continuing to expand and fees rising. It's noteworthy that 89% of journals increased APCs between 2019 and 2024, and in 40% of cases the increases outpaced inflation. Second, the uneven pace of digital transformation generates structural imbalances, where technologically advanced institutions benefit more quickly than under-resourced ones. Third, the credibility of open access publishing is undermined by the proliferation of predatory journals, which exploit author-pays models without providing rigorous peer review.

In Ukraine, the situation illustrates both the urgency and potential of innovative models. The ongoing war has highlighted the vulnerability of traditional publishing infrastructures and the need for resilient, decentralized, and cost-effective platforms. Many Ukrainian journals rely on **Open Journal Systems (OJS)** with limited institutional support, and most operate in **diamond open access** mode, sustained by universities without charging authors or readers. However, the absence of systemic funding, fragmented editorial practices, and the pressure to meet international indexing standards create additional obstacles. At the same time, Ukraine's integration into the European Research Area and alignment with EU open science policies provide a strong incentive for adopting innovative business models and forming consortia of university presses to strengthen editorial independence and global visibility.

The results were obtained within the project of the National Research Foundation of Ukraine ("Advanced Science in Ukraine") "Theoretical foundations for harmonising the editorial practices of Ukrainian academic publishing with international standards to enable Ukraine to compete in European open science", No. 25ГФ013-01 (2024–2026).

GENERATIONAL DIVERSITY AND WORK DYNAMICS IN THE AGRO-FOOD SECTOR

by Justin Nathanaël Andrianaivoarimanga | Rina Rachelle Nambinintsoa | ISCAM Business School, Madagascar | ISCAM Business School, Madagascar

Generational conflict refers to the tensions and misunderstandings that arise between age groups. Each generation is shaped by its historical, economic, and cultural context, which influences its values, behaviors, and worldview. These differences become sources of conflict. This phenomenon reflects the tension between continuity and change, as well as between transmitting a legacy and searching for innovation. In today's workforce, generational diversity is more pronounced than ever. Four generations now coexist within the same organizations: Baby Boomers, Generation X, Generation Y, and Generation Z. This situation is the result of longer working lives, demographic changes, and social and technological transformations. While this diversity is a source of richness, it can also lead to tension. Differences in values, communication styles, and work expectations influence hierarchical relationships, team cohesion, and collective performance. The effects of these tensions are evident at several levels. At the individual level, these tensions can lead to stress, demotivation, and exclusion, especially among younger employees. From an organizational perspective, these tensions can hinder communication, knowledge transfer, and collaboration. If these tensions are not recognized and managed, they can undermine the organization's cohesion and sustainability. Therefore, it is essential for companies to understand and manage the coexistence of different generations with their various backgrounds, experiences, and expectations. Intergenerational management should aim to transform differences into complementarities, not just prevent conflicts. In the Global South, this topic remains largely unexplored despite representing a strategic challenge for sustainable development. Effectively managing human capital characterized by diversity is essential to strengthening performance and social cohesion.

This study was conducted in Antananarivo within the agro-food sector. The study seeks to understand how generational diversity influences the organizational climate. Three generations were analyzed: Generation X, Generation Y, and Generation Z. Several dimensions were observed, including preferred management style, quality of relationships between colleagues, frequency and duration of conflicts, causes of tensions, and job satisfaction. The findings showed that certain variables, such as management style and job satisfaction, were not dependent on the generation to which employees belonged. Conversely, the perception of relationships, the frequency and causes of conflicts, and the ease or difficulty of intergenerational interaction are linked to generation. These findings suggest that the organizational climate varies according to the generational composition of staff.

Two complementary approaches can be adopted. The intergenerational approach reinforces factors common to all generations, such as the need for recognition, fairness, and meaning at work. The differential approach, on the other hand, considers the unique characteristics of each generation to adapt management and internal communication accordingly. This dual approach promotes cohesion and diversity. However, this study has certain limitations,

notably its narrow focus on the agro-food sector and the Antananarivo region. Expanding the study to other sectors would provide a more refined understanding of intergenerational dynamics. Nevertheless, the results underscore the importance of inclusive management adapted to generational diversity. This is essential for organizational performance, cohesion, and sustainability in an evolving world of work.

THE ARTIFICIAL LEGAL INTELLIGENCE SOCIETY AS AN OPEN, MULTI-SIDED PLATFORM FOR LAW-AS-COMPUTATION

by Daniele Allega | Universitas Mercatorum, LUISS Guido Carli

The Artificial Legal Intelligence (ALI) Society represents a community-governed platform initiative that reconceptualizes legal work as computable argumentation, addressing fundamental challenges in the deployment of AI systems within legal domains. This research aims to articulate a viable open business model for legal-AI services that successfully balances public-interest infrastructure with sustainable private offerings, while designing a modular "ALI Stack" that separates common, non-rival knowledge assets from proprietary, mission-specific applications. Furthermore, we demonstrate how transparent reasoning and auditability mechanisms can expand market trust for AI-assisted legal tasks without enabling unauthorized practice of law, thereby navigating the complex regulatory and ethical constraints inherent in legal technology deployment.

The current landscape of legal AI remains critically fragmented, characterized by isolated point solutions that optimize single tasks such as document summarization or clause extraction without establishing shared, auditable foundations. This fragmentation creates inefficiencies, duplicated efforts, and barriers to interoperability that limit the transformative potential of AI in legal practice. We propose ALI as a multi-sided platform architecture comprising four interconnected layers. The Commons Layer provides open ontologies, citation graphs, and argument-tree schemas as foundational infrastructure. The Service Layer delivers explainable inference services including retrieval, citation verification, and risk triage exposed through standardized APIs. The Governance Layer implements a transparency charter, contributor agreements, and safety review workflows ensuring responsible deployment. Finally, the Application Layer enables third-party tools for contracting, regulatory monitoring, and compliance education, creating value for diverse stakeholder groups.

Our methodology follows design-science research principles combined with platform-ecosystem analysis, creating a rigorous framework for developing and evaluating the proposed architecture. We construct specific artifacts including schemas, protocols, and governance templates, then evaluate them against explicit utility criteria encompassing interoperability, auditability, safety, and maintainability. These artifacts undergo iterative refinement through expert walkthroughs involving jurists, compliance officers, and developers, ensuring practical viability and stakeholder acceptance. A comparative licensing study examines open-core, dual licensing, and data-trust models for legal knowledge artifacts, analyzing their implications for knowledge sharing and value creation. Through detailed scenario analysis examining SME contracting, public-sector procurement, and corporate policy management, we probe value capture and value sharing mechanisms across diverse stakeholder groups, identifying sustainable economic models that align incentives while preserving public benefit.

The proposed ALI Stack architecture incorporates several innovative components designed to address the unique requirements of legal computation. A comprehensive Legal Knowledge Graph links statutes, cases, regulations, and commentary with full provenance tracking, creating a navigable semantic infrastructure for legal reasoning. Argument Trees function as first-class computational objects, formally capturing claims, warrants, evidence, and counter-arguments in machine-processable formats that preserve the dialectical structure of legal analysis. Comprehensive Audit Logs preserve prompts, retrieval contexts, model versions, and decision rationales, supporting both reproducibility and external review requirements essential for legal accountability. Safety Gates implementing data minimization, PII redaction, and policy-based routing to constrained models reduce confidentiality breaches and hallucination risks that could undermine professional standards.

Governance mechanisms rely on carefully designed institutional structures including a contributor code of conduct that establishes behavioral norms, an intellectual property and ethics policy favoring permissive code licenses and attribution-preserving knowledge licenses, and a safety review board empowered to block deployments that fail predetermined risk criteria. This governance framework ensures that the platform's evolution remains aligned with both legal professional standards and broader societal interests while maintaining sufficient flexibility for innovation and adaptation.

As an early-stage programme, our current deliverables include a scoped outline of a reference ontology for contracts and regulatory duties that establishes semantic foundations for legal computation, a preliminary API specification for citation-faithful retrieval-augmented generation focused on provenance capture, and an initial Platform Design Canvas mapping users, problems, value exchanges, and revenue options. Early stakeholder conversations and expert interviews have identified two priority use cases deserving immediate attention: contract intelligence for SMEs encompassing clause comparison, risk flagging, and negotiation heuristics, and regulatory change briefs providing difference analysis, applicability tests, and action checklists. These use cases will guide prototype development during the next iteration phase.

Our evaluation plan specifies sandboxed trials designed to produce end-to-end transparency throughout the legal reasoning process. Given a query, ALI will output an answer accompanied by a linked evidence bundle and a traversable argument tree enabling human review and validation. This approach transforms explainability from a post-hoc narrative into a verifiable artifact, addressing fundamental concerns about AI opacity in legal contexts. The implications of this work extend beyond technical architecture to encompass broader transformations in legal practice and AI governance. An open, auditable base infrastructure reduces duplication and vendor lock-in while preserving opportunities for differentiated enterprise value at the application edge. This model encourages a productive separation between public goods including shared schemas, test suites, and safety patterns, and private goods such as domain-specific datasets, custom workflows, and professional

warranties, aligning incentives across firms, researchers, and public sector organizations. We anticipate measurable improvements in compliance speed, reduced review effort through structured pre-assessment, and enhanced defensibility via standardized evidence packages.

FINANCING INNOVATIVE OPEN BUSINESS MODELS FOR P2P ENERGY PLATFORMS AND COMMUNITIES: INSIGHTS FROM EU AND ROMANIAN OPPORTUNITIES

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The energy transition entails not only the expansion of renewable energy production infrastructure but also the emergence of innovative digital platforms for peer-to-peer (P2P) energy trading and the establishment of energy communities. In this context, the objective of this study is to analyze the current funding framework available in Romania and at the European level for supporting P2P platforms and their associated mechanisms of open governance.

The methodology is based on a documentary analysis of funding calls launched or announced for the period 2025–2026, including national programs such as the Modernisation Fund, the Just Transition Programme, and the Sustainable Development Programme, alongside direct European instruments such as LIFE Clean Energy Transition, Horizon Europe, and the European Energy Communities Facility. The evaluation criteria employed focused on beneficiary eligibility, supported activities, types of financial instruments, and the potential for integrating digital components that enable P2P energy sharing.

The findings indicate that P2P financing in Romania is feasible through a combination of European calls, which primarily cover the preparatory, de-risking, and platform development stages, and national calls, which support energy infrastructure and related digitalization. The integration of these sources can create a coherent framework for moving from pilot initiatives to large-scale implementation.

The main limitation for Romania lies in the absence of a dedicated P2P funding line within national schemes and the uncertainty of the regulatory framework, which necessitates the adaptation of projects under broader calls. Nevertheless, the analysis highlights favorable conditions for consolidating open and replicable P2P platforms, with direct relevance for accelerating the energy transition in Romania.

CONSUMER SHOPPING PREFERENCES AND THE POWER OF BRANDING IN SUSTAINABLE FASHION MARKETING

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Sustainable fashion has gained traction in response to growing trends in sustainable consumption and production within the fashion industry. Fashion followers produce more waste and tend to consume more textile products than non-fashion consumers. However, when informed, they are willing to pay a premium price for slow fashion products. Consequently, consumer values and knowledge about sustainable fashion shape their purchase decisions. In this context, this research aims to examine consumer awareness of sustainable fashion brands and the influence of marketing factors on consumer purchase behaviour. It explores the role of brand image in promoting sustainable fashion consumption.

This study is based on a quantitative approach. Data were collected through a structured questionnaire. Three hundred five consumers participated in the survey. The collected data were analyzed using SPSS, which enabled the application of descriptive statistics, correlation analysis, and regression techniques to answer the research questions.

This research found that, although consumers are generally aware of the negative environmental and social impacts of fast fashion brands, price still plays a crucial role in their purchase decisions. Moreover, the quality of clothing is significant when consumers make a purchase decision. However, most participants reported that they considered brand image and indicated a preference for sustainable brands when given a choice, regardless of price. Findings suggest that while consumers are aware of the positive effects of sustainable fashion, they expressed a preference for purchasing inexpensive clothing in larger quantities rather than a limited number of expensive garments. In addition, findings reveal a tendency among consumers to prioritize physical shopping malls. Despite the increasing popularity of online shopping, the majority of participants prefer shopping primarily in malls. Furthermore, the participants reported that they receive information about their favorite brands through social media, influencers, and webpages, highlighting the significance of digital media in shaping consumer behaviour.

This research sheds light on the influence of sustainable fashion branding on consumer purchase decisions. Price and quality are preferred factors strongly influencing consumer purchase decisions, followed by brand and sustainability aspects. Therefore, sustainable fashion companies should emphasize these aspects in their marketing communication strategies. Marketing efforts should be made to encourage sustainable consumption of clothing and discourage excessive waste of fashion textile products.

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DETERMINANTS OF ONLINE SHOPPING ADOPTION IN THE EUROPEAN UNION: AN ECONOMETRIC ANALYSIS OF TECHNOLOGICAL AND SOCIO-ECONOMIC FACTORS

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The development of the digital economy has profoundly transformed the way consumers make their purchases, with online shopping becoming a central element of modern commerce. This paper aims to investigate the determinants of e-commerce adoption in the European Union, based on the hypothesis that both internet access and economic as well as socio-demographic characteristics significantly influence the extent to which this channel is used. The analysis relies on data provided by Eurostat for the EU member states, with the dependent variable defined as the share of individuals who made online purchases. The explanatory variables included are: internet use, gross domestic product per capita, urbanization rate, and tertiary education attainment. These variables capture both the technological dimension and the economic resources and human capital that can facilitate the integration of e-commerce. The methodology consists of a multiple linear regression model. The analysis is conducted for the most recent year available. The expected results highlight a positive association between internet use and online shopping, while GDP per capita, urbanization, and education represent additional factors that amplify this trend.

THE INFLUENCES OF INCOME INEQUALITIES, RENEWABLE ENERGY, TECHNOLOGICAL INNOVATION, AND STRINGENT CLIMATE POLICY ON ENVIRONMENTAL QUALITY

by Florian Nuta | Alina Nuta | Danubius International University | Danubius International University

Climate change is a top priority for world governments and international organizations. Nevertheless, emerging economies, especially, struggle to address critical economic matters such as unemployment, poverty, social inequalities, frail institutional frameworks, and others. While developed economies in the Western part of Europe push for climate action and involve a significant amount of resources into it, the emerging economies, mostly placed in the Eastern part of the continent, need further economic and financial adjustments to cope with these efforts. Stringent climate policy has significant effects on curbing environmental damage. National governments need a solid economic and social base to implement coherent and efficient environmental protection policies. In this context, we explore the impact of environmental policy stringency, unemployment rate, real minimum wages, average annual wage, wage gap, renewable energy, and technological innovation on the ecological footprint and greenhouse gas emissions in 15 European countries. Employing Two-Stage Least Squares Estimation (Lewbel 2SLS) the study unveils intriguing empirical effects. First, the stringency of environmental policy is associated with lower values of environmental welfare in all countries selected for this research. Furthermore, various economic and social inequalities also hinder these beneficial effects and altogether the climate action. Specifically, the income gap has a detrimental impact on the environment. At the same time, an increase in minimum wages also generates more ecological damage, which may be interpreted as the fact that these national economies did not reach the welfare level necessary to attain a real preoccupation for environmental quality. Specific measures and policy options must comprehensively mix sustainability targets and create a synergy between environmental, social, and economic goals. Social stability must be achieved by nurturing a strongly represented middle class and diminishing economic inequalities. Promoting climate action must go beyond the political discourse, materializing into facts and achievable targets, while economic and social welfare policies must leave behind populism, offering the citizens an environmentally friendly framework where they can manifestly get involved and participate.

INNOVATING THE BUSINESS OF SPORT: A SYSTEMATIC REVIEW OF CROSS-INDUSTRY BUSINESS MODEL INNOVATION WITH A FOCUS ON FITNESS

by Rozbeh Amiri | phd student of sport management

This study aims to examine how business model innovation (BMI) practices from various industries can inform the development of innovative and adaptive business models in the sports sector, particularly in fitness. By identifying transferable strategies, the research seeks to support the application of cross-industry innovation to enhance resilience, value creation, and sustainable growth in sport industry.

A systematic review was conducted following the PRISMA framework. Relevant studies were retrieved from Web of Science and Scopus. The initial search yielded 426 records, which were manually analyzed using thematic synthesis techniques. After removing duplicates and applying inclusion criteria, 41 studies were selected for final analysis.

Analysis of 41 studies reveals that digitalization, consumer shifts, and market disruptions drive business model innovation in sports and fitness. Key innovations include hybrid digital-physical models and hyper-specialization, enabled by AI and data analytics to transition from services to outcome-based offerings. Cross-industry adaptations enhance resilience, diversify revenue, and improve customer loyalty. Critical gaps remain in long- term sustainability and ethical data implementation.

This review concludes that Business Model Innovation (BMI) is a critical catalyst for transformation, pivoting the sports industry towards a hybrid, intelligent, and experiential future. However, this evolution is challenged by concerns regarding long-term economic sustainability, data ethics, and digital equity. Future success necessitates strategic ambidexterity from practitioners balancing innovation with core stability and further interdisciplinary research into the longitudinal impacts and inclusive design of these models to ensure equitable and viable industry growth.

EDUCATION IN THE LEARNING COMMUNITY

by Paunescu Loredana Maria | Iov Rodica Daniela | Petroleum-Gas of Ploiesti, România | Petroleum- Gas of Ploiesti, România

Human society is constantly evolving, sometimes at a faster pace, sometimes facing various problems and crises. In any situation, education must remain an important and priority area, which, in turn, requires continuous training in order to meet the current demands of society and prepare young people to actively integrate into social and personal life.
The purpose of the study was to gather information and statistical data on education issues.
The current study was based on formal information obtained from relevant authorities in the field of education, as well as on the opinions of civil society representatives, materials published in the media, and various information sources on the Internet.

The main pillars of the current research were the educational policy documents in force, as well as the experience gained at national and international level in the field of education in general and the evaluation of education quality in particular.

In today's fast-paced society, with rapid changes and immediate effects, the Romanian education system needs structural reform and a series of specific solutions to adjust the supply of Romanian education to the demand on the labor market.

1. In Romania, education has undergone numerous transformations over the decades, reflecting the political, economic, and social changes in the country. Although access to education has improved significantly in recent decades, especially after joining the European Union (EU), a number of major challenges remain, such as:
2. Regional and social disparities: access to quality education varies significantly between urban and rural areas, as well as between different socioeconomic groups. In rural areas, school dropout rates are much higher than in urban areas, and school infrastructure is often inadequate.
3. Insufficient funding: Romania currently allocates one of the lowest percentages of GDP to education in the EU, which affects the quality of education.
4. Higher education and the labor market: graduates of higher education may face challenges in finding a job relevant to their qualifications.

However, it should be noted that in Romania, the higher education system offers opportunities for academic and professional development for those who wish to obtain advanced knowledge and specialized qualifications in a field of study.

The analysis carried out and discussed in several scientific articles followed the path of thorough research into the academic and professional careers of final-year students and graduates in the field of economics, in particular.

Based on these analyses, it was found that college graduates report higher levels of life

satisfaction and are more likely to actively participate in community life.

Higher education offers multiple economic and social benefits. Graduating from college can lead to higher salaries, more career opportunities, and greater financial security.

Higher education not only ensures a higher income, but also increases the chances of employment in high value-added sectors such as IT, engineering, finance, and medicine. These sectors often offer more secure jobs, opportunities for career advancement, and additional benefits.

Another significant benefit of higher education is increased adaptability and resilience when it comes to economic change. People with higher education are better prepared to cope with economic downturns and changes in the labor market due to their advanced skills and ability to quickly adapt to new technologies and market demands.

A higher education degree also offers more opportunities for career advancement and continuous development. Graduates are more likely to hold leadership positions and participate in continuing professional development programs, which allow them to further develop their skills and knowledge.

Higher education provides students with the skills they need to compete in an increasingly globalized labor market.

Skills such as digital literacy, language skills, and intercultural knowledge are highly valued and promoted in many higher education programs. In conclusion, education, especially higher education, is fundamental to personal, economic, and social development in Romania.

It has been proven that people with higher education have better chances of finding employment, higher salaries, and commensurate professional satisfaction. They are more involved and better prepared to contribute to the sustainable development of their community.

By investing in education, we invest in ourselves and not only ensure a safer and better future, but also contribute to building a more equitable and developed society.

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THE IMPACT OF MOBILE APPLICATIONS AND ONLINE PLATFORMS ON FOOD PURCHASING BEHAVIOR

by Daniela Steluta Uta | Violeta Sima | Augustin Mitu | Petroleum - Gas University of Ploiesti

This article analyses the impact of mobile aplications and online platforms on consumer behavior, with a special focus on the changes generated by the technological, development, COVID-19 pandemic and the use of portable diveces such as smartphones and laptops. The study explores how these factors have influenced users' purchasing decisions, preferences, and attitudes towards the products and services offered by the main food delivery companies in the Romanian market. The pandemic accelerated the shift to digital commerce and radically changed consumer behaviors, leading to a significant increase in the use of delivery apps. At the same time, emerging technologies, such as artificial intelligence, have enabled the personalization of user experiences, influencing their preferences and habits. The study uses quantitative methods to analyze how these digital platforms shape consumer behaviors, especially when it comes to ordering food. The study results suggest a clear link between factors such as notoriety, marketing mix factors, habits acquired during the pandemic, perceived usefulness, and the intention to continue using mobile apps and online platforms to purchase food. Technological progress, the engine of society's development, has imposed automation and the internet in everyday life. The new technologies of the fourth industrial revolution have a significant impact on consumer behavior, determining new consumption patterns, contributing to the creation of experiential value, as shown by Hoyer et al. (2020). In recent years, the Internet has become increasingly important in business, and websites have become essential tools for marketing (Sima et al., 2019). The food delivery industry has also been revolutionized by technology. Especially after the COVID-19 pandemic, home delivery services have become an essential part of urban logistics services (Visser et al., 2014). The dynamic lifestyle has imposed the widespread use of technologies, leading customers to use online commerce and mobile applications. These allow for quick placement of orders and real-time deliveries' tracking. In addition, it facilitates instant access to information and services, offering, in some cases, personalized recommendations based on usage data. Thus, food delivery applications suggest restaurants or dishes based on previous orders or user preferences. This type of personalization improves the consumer experience and encourages loyalty, while contributing, at the same time, to their comfort. Real-time feedback also helps restaurants improve their products and services. This study aims to assess the intention of Romanian consumers to use mobile applications for purchasing food products and to test hypotheses based on research in the specialized

literature and the socio-demographic characteristics of the respondents.

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CURRENT TRENDS AND PERFORMANCE IN THE NETWORK MARKETING INDUSTRY

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Over the past two decades, the network marketing industry has undergone remarkable growth, both in terms of global market value and the diversity of companies operating within it. One of the standout performers in recent years has been LifeWave, a company recognized for its innovative health and lifestyle technology products.

This article explores LifeWave's business performance, offering insights that help explain the growth dynamics of direct selling companies and highlight the potential of this business model in today's economy.

LifeWave exemplifies a network marketing company that has achieved rapid expansion in recent years, not only through broader international reach but also through substantial increases in revenue. Publicly available data indicates annual growth jumps in the tens or even hundreds of millions of USD starting around 2018–2019. Industry reports and recognition in DSN rankings further reinforce the company's trajectory of accelerated growth.

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THE ROLE OF BUSINESS STRATEGY IN ACHIEVING SUSTAINABLE COMPETITIVE ADVANTAGE: INSIGHTS FROM CONTEMPORARY MANAGEMENT PRACTICES

by Oprea Gabriela | Petroleum-Gas University of Ploiești, Faculty of Economic Sciences

The dynamics of the global business environment, characterized by rapid technological advancements, increased globalization, and the evolving expectations of consumers, have fundamentally transformed how organizations craft and implement their strategies. In this context, understanding the interplay between business strategy and sustainable competitive advantage has become essential for the long-term success and survival of firms. This paper explores the pivotal role of strategic management practices in securing sustainable competitive advantage, focusing on contemporary approaches that integrate innovation, corporate social responsibility (CSR), and digital transformation.

The study examines the various types of strategies adopted by businesses to address the challenges posed by an increasingly competitive and uncertain market. It highlights the importance of aligning organizational capabilities with market opportunities and discusses the strategic choices available to firms in sectors ranging from manufacturing to services. Special attention is given to the strategic frameworks developed over the past few decades, including Michael Porter's *Competitive Strategies* (1980) and the *Resource-Based View* (RBV), which emphasize differentiation, cost leadership, and resource accumulation as key drivers of competitive advantage.

In the context of the modern economy, the research identifies the growing importance of innovation as a critical component of strategy formulation. Firms that continuously invest in research and development (R&D), adopt advanced technologies, and create new business models are better positioned to achieve a sustained competitive edge. The study also delves into the concept of digital transformation and its strategic implications, emphasizing the role of information technology in reshaping organizational capabilities and creating value for customers and stakeholders.

Another key aspect of the paper is the examination of corporate social responsibility (CSR) as a strategic lever for building long-term relationships with stakeholders and enhancing brand reputation. As consumer preferences shift towards companies that demonstrate ethical behavior, environmental stewardship, and social responsibility, organizations that integrate CSR into their core strategies are increasingly able to differentiate themselves from their competitors. Furthermore, the study discusses how CSR can contribute to organizational sustainability by fostering loyalty among customers and attracting top talent, which are vital components of competitive advantage.

The paper also addresses the impact of globalization on strategic management, with a focus on how firms can navigate the complexities of cross-border competition and international

market entry. It highlights the importance of understanding cultural, political, and economic differences when formulating global strategies and the need for firms to adapt their offerings to diverse local markets while maintaining a cohesive global brand identity.

Finally, the study concludes with practical recommendations for business leaders and managers looking to create and sustain competitive advantages in today's rapidly changing business environment. It emphasizes the need for strategic flexibility, continuous learning, and the integration of both technological and human capital as essential components of long-term success. The paper suggests that businesses must focus not only on economic performance but also on social and environmental outcomes to remain competitive and relevant in the future.

This paper contributes to the academic discussion on business strategy by offering a comprehensive framework for understanding the strategic levers organizations can use to achieve a sustainable competitive advantage in a complex and evolving marketplace. It also underscores the importance of integrating traditional strategic management theories with modern concepts of innovation, CSR, and digital transformation.

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PUBLIC-PRIVATE PARTNERSHIP MANAGEMENT: CHALLENGES, BEST PRACTICES AND DEVELOPMENT DIRECTIONS IN THE CONTEMPORARY ECONOMY

by Oprea Gabriela | Petroleum-Gas University of Ploiești, Faculty of Economic Sciences

Public-private partnerships (PPPs) represent one of the most widely used and promising institutional frameworks through which the public and private sectors collaborate to deliver essential goods, services, and infrastructure to society. In a context characterized by budgetary pressures, growing social needs, and increasing demands for resource efficiency, PPPs have emerged as governance mechanisms that combine the regulatory and administrative competencies of the state with the technical, managerial, and financial expertise of the private sector. However, the success of such partnerships largely depends on the quality of management applied, on the fair distribution of risks and benefits, and on the degree of transparency and accountability established throughout the contract lifecycle.

This paper aims to analyse the fundamental dimensions of management within public-private partnerships, focusing on three main axes: governance and regulation, structuring and risk allocation, and performance monitoring and evaluation. The first axis addresses the role of the legislative and institutional framework in either facilitating or constraining the applicability of PPPs. Without clear and coherent regulations, projects risk being blocked in the planning phase or generating significant additional costs. The second axis examines the mechanisms for transferring and sharing risks (financial, operational, technological, legal), highlighting the importance of balanced contractual architecture that provides proper incentives for both parties. The third axis emphasizes monitoring and evaluation systems, without which it is impossible to ensure compliance with quality standards, deadlines, and economic efficiency objectives.

From an international practice perspective, significant differences can be observed between developed and emerging economies. In countries with a strong tradition of PPPs, such as the United Kingdom, Canada, or Australia, the focus is on performance optimization and the development of standardized evaluation methods. In contrast, in emerging economies, particularly in Central and Eastern Europe, challenges are linked to legislative instability, limited administrative capacity, and cultural resistance to such partnerships. Romania, as a case study, reflects these challenges, showing a notable gap between strategic intentions to attract private investment and the limited number of projects successfully completed.

In this context, PPP management becomes essential for achieving economic and social development objectives. An integrated approach—based on strategic planning, transparent

sharing of responsibilities, and participatory governance—can strengthen trust between the public and private sectors. Furthermore, the introduction of modern performance management tools, such as results-based contracts, efficiency indicators (KPIs), and community feedback mechanisms, represents key factors for the long-term sustainability of projects.

Finally, the paper provides several recommendations for adapting managerial practices to national specificities: creating PPP support units within public administration, continuous training of personnel involved, digitalization of monitoring processes, and increased transparency through regular public reporting. Through these measures, PPPs can become not only a financial and administrative instrument but also a genuine bridge of cooperation between the state, private sector, and society.

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THE ROLE OF THE BANKING SYSTEM IN THE GREEN TRANSITION: BETWEEN INSTITUTIONAL CONSENSUS AND PRAGMATIC OPPORTUNITIES

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The paper explores the strategic role of the banking system in advancing the green transition and supporting the integration of sustainability objectives within financial intermediation. As climate change and environmental degradation increasingly affect macroeconomic stability, the banking sector becomes a pivotal actor in steering capital flows towards low-carbon, resilient, and inclusive economic models. The study aims to identify how institutional consensus is shaped among regulators, financial institutions, and international organizations in designing coherent frameworks for green finance, while also assessing the practical challenges and opportunities that arise from their implementation.

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WHAT WORKS IN RECYCLING: A TOPSIS-DRIVEN PRIORITY MAP FOR INDUSTRY ACTIONS, CONSUMER NUDGES, AND EDUCATION MICRO-INTERVENTIONS

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Recycling outcomes depend on a crowded field of possible actions, from plant modifications to consumer prompts and classroom programs, while budgets and capacity are limited. This study provides a clear, evidence-based priority map for what to do first. We assembled a compact portfolio of interventions across three levers: industry operations (standard bin architecture, deposit-return upgrades), consumer behavior (QR tips at disposal points, standard bin placement, community challenges), and education (micro-modules for schools/universities, repair/reuse pop-ups). Using TOPSIS (Technique for Order Preference by Similarity to Ideal Solution), we evaluated each option on multiple criteria (reduction of contamination, participation enhancement, scalability, improvement of cost per ton, deployment time, and digital readiness) with weights determined through a brief multi-stakeholder investigation. The results are intended to form a short list, ranked by implementation steps, staffing, budget bands, KPIs, and a lightweight open template that allows other cities to repeat the process with improved timeframe scenarios, and help operators, schools, and retailers coordinate quickly and achieve visible improvements in circular performance.

EDUCATION FOR SUSTAINABILITY AS A TRANSVERSAL KNOWLEDGE: LEGAL AND PEDAGOGICAL INNOVATIONS FOR A GREEN FUTURE

by Mario D'Avino | Giovanni Spatola | Antonio Capasso | Mercatorum University of Rome | Mercatorum University of Rome | Mercatorum University of Rome

In the context of global ecological transition and increasing socio-environmental complexity, sustainability emerges not merely as a thematic concern but as a transversal epistemological paradigm that redefines the relationship between education, law, and civic responsibility. This paper investigates the integration of sustainability education within national and international legal frameworks, highlighting its transformative potential in shaping inclusive and future-oriented educational systems.

Drawing on the Agenda 2030 and the Sustainable Development Goals (SDGs), the study explores how sustainability education has evolved from a peripheral pedagogical theme to a strategic axis of curricular reform. Particular attention is given to the Italian legislative trajectory, including Law No. 92/2019 on civic education, the constitutional reform of Articles 9 and 41 (2022), and the Indicazioni Nazionali 2025, which collectively reframe the role of schools as laboratories of ecological citizenship and intergenerational justice.

The paper also examines the normative impact of international instruments such as the Paris Agreement (2015), the European Green Deal (2019), and the EU Council Recommendation on learning for the green transition (2022/C 243/01), emphasizing the convergence between legal obligations and pedagogical innovation. Through a critical analysis of policy documents and educational practices—including the national program #IosonoAmbiente and the UNESCO-led Greening Education Hub—the study illustrates how law and education can coalesce to foster environmental awareness, systemic thinking, and civic engagement.

Ultimately, the contribution argues for a transdisciplinary reconfiguration of educational and legal systems as adaptive ecosystems, capable of transmitting the complexity and interdependence of global challenges. It calls for a shift from normative prescription to cultural transformation, positioning sustainability education as a strategic investment for democratic resilience and planetary stewardship.

TOWARDS AN ENERGY PHYSICAL INTERNET: OPEN BUSINESS MODELS AND PLATFORMS FOR ELECTRICITY DISTRIBUTION ENABLED BY IOT, BLOCKCHAIN, AND CONDITIONAL PAYMENTS

by Fabrizio Benelli | Franco Maciariello | Redvin Marku | Vittorio Stile | Universitas Mercatorum | Universitas Mercatorum | Tirana Business University | Universitas Mercatorum

The Physical Internet (PI) has emerged as a systemic paradigm for overcoming inefficiencies and fragmentation in logistics by introducing modular, interoperable, and hyperconnected infrastructures. Building on foundational PI work and European roadmaps (Montreuil; Ballot; ALICE-ETP), this paper extends the PI concept to the energy sector, advancing the notion of an "Energy Physical Internet" (EPI). Here, electricity is conceptualized as modular "energy packets" dynamically routed across interoperable microgrids and distribution hubs, enabling innovative platform-based business models for decentralized energy trading. The proposed EPI architecture relies on three mutually reinforcing pillars. First, IoT-enabled infrastructures provide real-time observability and control of distributed assets. Second, blockchain-based registries ensure tamper-proof traceability of energy provenance, carbon intensity, and transactions, fostering trust and regulatory compliance. Third, cryptocurrency-enabled conditional payments, implemented via Ethereum smart contracts, automate peer-to-peer settlements conditional on real-time balance and renewable performance. Pilot projects such as the Brooklyn Microgrid already illustrate the feasibility of blockchain-governed energy platforms. The model departs from hierarchical utility-driven systems by empowering prosumers, energy communities, and peer-to-peer marketplaces to act as autonomous yet interoperable nodes. Expected benefits can be assessed through KPIs such as transaction-cost reduction, settlement latency, and resilience indices. Moreover, governance touchpoints, including DSO/TSO coordination and rules for energy data spaces, are recognized as essential for scalability. Our contribution is theoretical and hypothesis-driven. We propose research propositions on (i) interoperability standards for modular energy exchange, (ii) AI-assisted routing for balancing energy packets, and (iii) token-based incentives for prosumer engagement. These propositions directly address known challenges in IoT security, blockchain scalability, and governance. We also announce the development of a conceptual framework and architecture diagram to guide empirical research. By positioning energy as a new frontier for the PI, this paper defines an agenda for interdisciplinary research at the intersection of logistics, energy economics, and digital platforms, aligned with EU Green Deal and Horizon Europe objectives.

RECONFIGURING EPISTEMIC INTERSECTIONS BETWEEN EDUCATION, LAW, AND KNOWLEDGE PRODUCTION: TRANSDISCIPLINARY PERSPECTIVES FOR INSTITUTIONAL SUSTAINABILITY

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The article *"Reconfiguring Epistemic Intersections Between Education, Law, and Knowledge Production: Transdisciplinary Perspectives for Institutional Sustainability"* addresses the urgent need to rethink the ways in which education, legal systems, and knowledge governance interact in the face of rapidly evolving global challenges. These challenges—ranging from climate change and digital transformation to the widening of educational inequalities and the weakening of democratic institutions—call for innovative frameworks that transcend traditional disciplinary boundaries. The paper situates itself within this context, proposing a transdisciplinary reconfiguration of the epistemic foundations and institutional practices of both education and law, aligned with the objectives of the United Nations 2030 Agenda and the broader ecological and social transitions it envisions.

The central aim of the article is threefold: (1) to interrogate the epistemological and normative paradigms that historically shaped education and law, highlighting their limitations in addressing contemporary crises; (2) to analyze practical cases where these paradigms are being challenged and reimagined; and (3) to articulate a theoretical framework that conceptualizes educational and legal systems as adaptive ecosystems grounded in principles of epistemic equity, cognitive justice, and institutional sustainability. In this way, the article moves beyond descriptive accounts and seeks to build an actionable model of transdisciplinary knowledge governance.

Methodologically, the paper combines theoretical reflection with empirical case analysis. It mobilizes a comparative and critical approach that bridges philosophy of education, legal theory, and practice-based innovation in institutional contexts. This dual orientation—toward both conceptual development and real-world application—ensures that the article not only contributes to academic debates but also offers insights for practitioners, policymakers, and institutional leaders.

The first case study focuses on the **Innovation Lab – From Idea to Impact**, an initiative developed at Sapienza University of Rome. The Lab is presented as a paradigmatic example of educational innovation that operationalizes participatory methodologies and co-design logic. Functioning as a transformative learning environment, the Lab emphasizes the cultivation of impact-oriented competencies, such as problem-solving, collaboration, and civic engagement. These competencies are crucial in fostering active citizenship and in preparing students to navigate and contribute to complex social realities. By analyzing the Lab's practices and outcomes, the article demonstrates how educational institutions can reconfigure themselves as

sites of experimentation where traditional hierarchies of knowledge are unsettled, and where learners are empowered to become co-producers of knowledge and agents of societal change.

The second empirical focus is on **juvenile justice** as a privileged domain for exploring generative intersections between law and education. Drawing on experiences within the *Tribunale per i Minorenni* in Italy and insights from the European project *JUST CLOSER*, the article examines how legal practices can be reimagined to integrate educational perspectives. Here, law is conceptualized not simply as a normative framework that imposes rules and sanctions, but as a relational infrastructure that can facilitate personalized educational pathways, particularly for young people in vulnerable conditions. This reconceptualization foregrounds the potential of juvenile justice systems to act as spaces of rehabilitation and empowerment rather than mere instruments of punishment. The analysis reveals that embedding educational approaches into legal processes can enhance social inclusion and contribute to breaking cycles of marginalization and exclusion.

Building on these two cases, the article develops a **theoretical reconfiguration of education and law as adaptive ecosystems**. This reconfiguration draws on principles of epistemic equity—ensuring that diverse forms of knowledge are recognized and valued; cognitive justice—acknowledging the legitimacy of different epistemologies and life-worlds; and institutional sustainability—reframing institutions not as static entities but as dynamic systems capable of learning, adapting, and regenerating. The comparative and critical analysis underscores the need to overcome disciplinary fragmentation and to promote governance models rooted in collaboration, intersectionality, and commons-oriented logics. Such models can generate more resilient and equitable institutions, capable of addressing complex global challenges in ways that are both inclusive and sustainable.

Preliminary results emerging from this inquiry suggest several contributions. First, they highlight the potential of transdisciplinary approaches to unlock synergies between education and law, thereby expanding the scope of both fields. Second, they demonstrate that institutional practices such as participatory educational labs and integrative juvenile justice models can serve as testing grounds for reconfiguring traditional paradigms. Third, they suggest that the pursuit of epistemic equity and cognitive justice is not only a theoretical aspiration but also a practical necessity for ensuring institutional sustainability in times of crisis.

In conclusion, the article argues that the intersections of education, law, and knowledge production must be actively reconfigured to respond to contemporary challenges. This requires embracing transdisciplinarity as both a methodological orientation and an institutional ethos. By grounding its reflections in concrete cases and linking them to broader theoretical frameworks, the article provides a roadmap for how institutions can align themselves with the goals of the UN 2030 Agenda while simultaneously fostering democratic resilience, ecological responsibility, and social justice.

THE LINK BETWEEN ONLINE UNIVERSITIES AND SUSTAINABILITY: BENEFITS AND TRADE-OFFS IN THE ITALIAN CONTEXT

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Objective. In a global context characterized by the overcoming of numerous planetary boundaries, compounded by the demographic increase predicted by the United Nations (the forecast is that the world population will continue to grow, reaching approximately 9.7 billion in 2050), it is easy to understand how all relevant sectors must intervene to put a stop to this negative spiral; many sectors are facing significant challenges, and one sector that is too often overlooked is education. This paper aims to investigate how online universities can contribute to decarbonization, inclusiveness, and, in general, provide important boosts to holistically address all aspects of sustainability (ESG). Online universities enable the delivery of teaching remotely wherever permitted (by government regulations or practical issues), systematically facilitating the attendance of lectures and exams by students, who can complete tasks from home, avoiding travel and various expenses.

Methodology. The paper reviews, through a systematic review of literature and case studies relating to Italian online universities, all the positive implications associated with teaching delivery in these ways, without overlooking any potential negative aspects.

Results. Preliminary results highlight the savings in greenhouse gas emissions and pollutants associated with students' lack of travel to university, a figure that will become increasingly important with the expected population growth (the increase in zero-emission vehicles could certainly reduce emissions, but is currently not significant). This also benefits students in having more time to study, relax, or pursue hobbies. Emission savings are also associated with the avoided heating and lighting in classrooms and on campus, despite the fact that many universities are investing heavily in the decarbonization of their facilities by installing photovoltaic panels and modernizing lighting systems (through more efficient systems such as LEDs) or heating systems. In accordance with this, the Italian Marconi Telematic University launched its Sustainability project back in 2014, carrying out multidisciplinary scientific research on the peculiarities of online teaching from the point of view of the advantages in terms of socio-economic-environmental sustainability: through these studies they calculated the advantages in terms of emissions, quantifying them (academic year 2020-21) at 11,539 t CO_2/year, of which approximately 60% equal to 6,988 t CO_2/year relating to the reduction of student mobility and the remaining 40% equal to 4,551 t CO_2/year relating to lighting (13%) and heating (27%) avoided. It should be added that online universities, with their digitalized lectures, offer a better viewing experience (physical classrooms can be often crowded), and through content recording, they also allow for on-demand access (furthermore, the use of digital platforms and cloud computing allows for the sharing of IT resources, reducing the need for physical hardware). Furthermore,

since much of the teaching material is available online, there is no need to print handouts and books, thus reducing the consumption of natural resources. A very interesting aspect is inclusiveness: online universities, through their innovative method of delivering content and administering exams, significantly increase the level of inclusiveness, improving it on two levels: the first refers to the inclusiveness of students with disabilities, who can conveniently access academic content without having to face the difficulties they would face in attending courses on-site (here we can talk about the digital removal of architectural barriers); the second refers to greater economic sustainability resulting from savings in terms of transportation costs, university residences, and university canteens. It should be noted that even online universities have weaknesses: the infrastructure supporting online systems is energy-intensive (data centers and servers), and even students' and professors' electronic devices must be accounted for in terms of digital pollution (this can only be partially mitigated through self-generation, sustainable energy sources, and device efficiency). Another negative aspect is undoubtedly the loss of daily networking opportunities that only constant in-person activity can provide. Indeed, although student socialization tools have reached significant levels (multiple video calls, instant collaboration on online projects), the power of human contact, sharing, and connection, even during breaks, cannot be replaced by any digital tool (many academic collaborations can, in fact, arise during social moments outside of class). In conclusion, given the current planetary problems which will worsen in relation to the expected population growth, there is a need to rethink education, and online universities can represent a smart opportunity and a driving force for sustainable transition by increasing delivery efficiency and reducing emissions. These universities can be smart vectors of knowledge (Orecchini et al., 2016), capable of transferring knowledge across space and time, making it available for use remotely from the point of access of the original source, becoming a key factor in the smartification of education and research.

Originality. The originality of the paper lies in its attempt to highlight both the positive and negative impacts of online universities, not just by focusing on easily identifiable issues but by analyzing studies and concrete data on the efficiency and sustainability of this educational modality.

THE IMPORTANCE OF FEEDBACK IN THE DISTANCE LEARNING PROCESS

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Continuous improvement, optimization and updating of teaching activities and materials and the entire educational process are essential aspects that any university, faculty, must include in its strategic objectives. The precise identification of the ways in which these objectives can be achieved is based on various forms of educational management, among which an important role is played by the way of obtaining feedback from stakeholders.

Distance and part-time education represent modern ways of organizing the educational process through which students have the opportunity to pursue and graduate higher education in an optimal combination with professional and family activity. Through information and the correct choice of study programs, the accumulation of knowledge and experience in the field of work can be achieved simultaneously.

The main objective of the paper is outlined starting from the specific particularities of these forms of distance learning, which include both face-to-face meetings and online, synchronous or asynchronous ones, thus easily identifying the importance and need to obtain the opinions of stakeholders, from both directions, teachers and students, in order to improve everyone's activity.

The permanent evaluation and modelling of the educational process in order to obtain the best results is a goal of higher education institutions that have included distance and reduced-frequency forms of education in their offer. In this regard, a series of specific evaluation methods are used, through which the necessary information can be obtained.

Feedback in the educational process is an important part of the design and implementation of teaching activities. It can manifest itself bidirectional and has the role of improving communication between the actors involved, teachers and students, as well as the teaching and evaluation process.

From the perspective of students, feedback is important in terms of the opinions and points of view that teachers offer and based on which students can improve the results of their own activity. The fact that we are talking about forms of distance and reduced-frequency education is an additional reason to emphasize the importance of teacher-student communication. Face-to-face meetings allow for a direct exchange of ideas and opinions, but, most of the time, students are much more receptive to on- and off-line feedback, offered through dedicated e-learning platforms.

From the opposite perspective, of teachers, feedback from students, beyond being a mandatory requirement of quality assurance committees in higher education, represents a mirror of the teaching activity. The use of questionnaires, imposed or recommended by ARACIS (Romanian Agency for Quality Assurance in Higher Education) through standards

specific to distance, part-time education, represents one of the most objective methods by which students' opinions about study programs, the educational act, and study materials are identified.

The results obtained represent input data into the process of continuous improvement of educational management specific to distance and part-time forms of education.

This paper aims to present the importance of feedback as an important part of improving the distance education process, the case study being based on the author's professional experience, but also on the annual reports of the Distance and Part-time Learning Centre within the University of Petroleum and Gas Ploiești.

Finally, the conclusions summarize the main findings and recommendations, highlighting the importance of two-way feedback in educational management.

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SKILL GAPS AND EMPLOYMENT READINESS AMONG VARENDRA UNIVERSITY STUDENTS

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This study examines the mismatch between university education and job market demands by assessing students' perceptions of their skills, academic preparedness, and career readiness. A survey of 130 Varendra university students by convenience sampling from diverse disciplines (Economics, Engineering, Business, etc.) revealed that only 45% believe their curriculum aligns with industry needs, while 35% report partial alignment. Key skill gaps include digital competencies (Programming, Digital Marketing, Data Analysis) and soft skills (Communication, Problem-Solving). Only 14.6% of students had internship experience, and 40% lacked confidence in job interviews. Challenges such as limited career guidance and lack of practical training were frequently cited. The findings highlight urgent needs for curriculum modernization, industry-aligned workshops, and enhanced career support. This research contributes to the discourse on higher education reform by identifying actionable strategies to bridge the skill gap and improve graduate employability.

THE ROLE OF DIGITAL LITERACY IN ADDRESSING GLOBAL CHALLENGES THROUGH CONSUMER EDUCATION

by Corina Ene | Petroleum-Gas University of Ploiesti, Romania

This paper investigates the key new trends in consumer education, which is placed nowadays at a critical intersection between digital literacy the need to properly address contemporary global challenges. The main objective of the research is to determine to what extent enhanced digital literacy among consumers can act as a catalyst for sustainable consumption patterns and collective contribution towards global issues such as climate change, social inequality, and economic sustainability. As specific objectives, the paper aims to analyze the evolving landscape of consumer education in the digital era, to identify key digital literacy competencies essential for modern consumer empowerment, to evaluate the effectiveness of digital platforms in delivering consumer education, and to design a framework for efficiently integrating digital literacy into consumer education programs.

This research employs a comprehensive literature review, using a systematic approach of relevant academic databases to identify emerging trends and patterns in the field of consumer education across multiple disciplines including consumer behavior, digital literacy, and educational technology. Sustainability studies will also be taken into consideration. Through a thematic analysis approach, followed by synthesis, key themes will be encompassed, such as: digital literacy competencies, consumer education delivery methods, technological innovations, and their application for addressing global challenge. Based of findings from diverse scientific sources, convergences and divergences in data will be examined, while identifying gaps in current knowledge and also areas for future investigation.

Evolution within the field of consumer education reveal several significant trends transforming during digital age, including the need for extensive digital skills and competencies, the shift in the channels and pathways for delivering consumer education, the rising integration of sustainability concerns, the risk of exacerbating inequalities in consumer empowerment and access to educational resources. In this context, digital literacy enhancement appears as a promoting factor for consumers' engagement in addressing global challenges.

Thus, this research contributes to understanding the role of digital literacy as a main enabler for effective consumer education in addressing global challenges. The findings suggest that better integration of digital literacy into consumer education frameworks is essential for developing empowered, informed consumers capable of contributing to sustainable global solutions through their consumption choices and market behaviors.

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SUSTAINABLE CONSTITUTIONALISM IN THE REPUBLIC OF MOLDOVA – REFLECTIONS FOLLOWING THE 2024 CONSTITUTIONAL REFORM

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The adoption of Article 140^1 by Law no. 244/2024, along with the amendment of the Constitution's preamble, marks a defining moment in the constitutional evolution of the Republic of Moldova. By enshrining European integration as a strategic objective, the state has opened the path toward legal and symbolic alignment with the values of sustainable development. This paper proposes a critical examination of the 2024 constitutional reform through the lens of sustainable constitutionalism—an emerging doctrinal direction that integrates environmental protection, intergenerational equity, and responsible governance into the constitutional framework.

The study analyzes both the normative content of the new provisions and the legitimacy of the adoption process, using an interdisciplinary approach at the intersection of constitutional law, European integration, and sustainable governance theory. Sources include national constitutional texts, EU legislation, decisions of the Constitutional Court of Moldova, comparative jurisprudence from Germany, France, and Norway, as well as scientific literature (Bosselmann, Jakab, Herlin-Karnell) and institutional reports (OSCE/ODIHR, CEC, Constitutional Court of Moldova). The methodology combines doctrinal and document analysis, comparative legal interpretation, and critical evaluation of legal and political contexts.

Preliminary findings reveal that although Article 140^1 does not contain explicit references to sustainability, it can be interpreted extensively in light of Moldova's international commitments, particularly those made through the Voluntary National Review (VNR) and the 2030 Agenda. The reform may serve as a foundational reference point for the development of a forward-looking constitutional jurisprudence. However, the electoral process was marked by political polarization, limited voter turnout, and a fragile majority of 50.35%, which raises concerns about the reform's transformative potential. The absence of implementation laws and the risk of symbolic constitutionalism remain pressing challenges.

Comparative analysis shows that several European states (e.g., Germany, Norway, France) have integrated sustainable development principles directly and justiciably into their constitutions, either through fundamental rights (such as the right to a healthy environment) or through explicit state obligations. Moldova is currently in an early phase of this process, having introduced a European orientation normatively, but lacking clear mechanisms to implement sustainability principles. Nonetheless, Decision no. 24/2024 of the Constitutional Court affirms the potential for an evolutive interpretation and opens the way for the preamble to be used as a source of constitutional meaning.

In this context, the role of the Constitutional Court becomes central. In the absence of explicit provisions, the Court is called upon to interpret Article 140^1 systemically, aligning it with other constitutional principles and relevant European standards (such as the Charter of Fundamental Rights of the EU and the Sustainable Development Goals). Comparative legal doctrine illustrates how sustainability values can be activated by constitutional courts even without express textual support. Moldova thus has the opportunity to build its own model of sustainable constitutionalism—one rooted in jurisprudential activism, legislative development, and civic engagement.

The paper outlines five strategic recommendations: (1) constitutional revision to include explicit provisions on environmental rights and intergenerational equity; (2) adoption of a comprehensive legal framework on sustainable governance; (3) development of coherent constitutional jurisprudence aligned with EU standards and the SDGs; (4) establishment of an interinstitutional consultative framework to monitor the implementation of sustainability principles; and (5) promotion of civic and environmental constitutional education in schools and universities.

In conclusion, this study argues that the 2024 constitutional reform may become the foundation of an authentic sustainable constitutionalism in the Republic of Moldova—provided there is a sustained commitment from institutions and civil society. While the reform provides a crucial symbolic framework, it requires normative, jurisprudential, and participatory consolidation to transform sustainability from a declarative political objective into an enforceable constitutional value.

ARCHITECTURAL HERITAGE ASSETS – BETWEEN LEGAL PROTECTION AND SUSTAINABLE DEVELOPMENT. A COMPARATIVE STUDY OF THE REPUBLIC OF MOLDOVA, ROMANIA, AND THE EUROPEAN UNION

by Ursu Viorica | Diana Moroșan | Technical University of Moldova | Technical University of Moldova

Architectural cultural heritage plays a vital role in defining collective identity and preserving the historical memory of communities. In the context of contemporary challenges such as accelerated urbanization, climate change, population migration, and the pressures of economic development, the legal protection of these assets becomes not only a moral obligation but also a strategic necessity for ensuring sustainable development. This research aims to analyze, from a comparative perspective, the legal regime of architectural heritage assets in the Republic of Moldova and Romania, in correlation with the requirements and best practices promoted at the level of the European Union. The overarching objective is to identify a functional balance between the preservation of these assets as cultural values and their responsible use in economic, social, and urban development processes.

The methodological approach of this research combines doctrinal and normative analysis of the legal framework applicable in the two states, a comparative interpretation of legislation in relation to relevant European standards (such as the Granada Convention, EU regulations, and the jurisprudence of the Court of Justice of the European Union), as well as the examination of case studies that illustrate the concrete ways in which architectural heritage assets are preserved, valorized, or, conversely, neglected. The analysis is further supported by statistical data, international reports (UNESCO, ICOMOS, the European Commission), and assessments regarding the impact of public policies on the built heritage. Additionally, data from European programs with a cultural and sustainability component (e.g., Interreg, Creative Europe, the European Green Deal) are included, providing a concrete framework for the development of sustainable solutions.

Preliminary findings reveal significant gaps between the legal framework of the Republic of Moldova and European standards, particularly in terms of mechanisms for the classification, protection, and rehabilitation of historical monuments. In Moldovan legislation, there is a persistent conceptual confusion between key terms such as “historical monument,” “architecturally valuable building,” and “protected area,” which affects the applicability of legal norms and access to restoration funding. In contrast, Romania benefits from a more complex legal framework and specialized institutions, yet still faces challenges related to implementation, transparency, and the involvement of local communities in heritage-related decision-making processes.

The comparative analysis enables the identification of good practices drawn from Romanian and European experiences, such as the use of a mixed legal regime (legal protection combined with fiscal incentives), the integration of architectural heritage into local urban

development strategies, and the promotion of sustainable functional reconversion of historic buildings—for instance, the transformation of former administrative or industrial facilities into cultural centers, museums, or co-working spaces. At the same time, the considerable potential of architectural heritage as a driver of cultural tourism and social cohesion becomes evident, provided that it is supported by coherent, participatory, and well-funded public policies.

The research highlights the need for legislative reform in the Republic of Moldova to ensure harmonization with the EU acquis, clarify the legal regime applicable to heritage assets, establish accessible digital registries, and develop public–private partnerships for restoration projects. Equally important is the education and awareness-raising of the general public regarding the value of architectural heritage—not merely as a cultural legacy, but as an active resource for the sustainable future of communities.

Through this study, the aim is to contribute to shaping an integrated vision of architectural heritage protection, in which legal norms, sustainable policies, and cultural values reinforce one another. The paper offers a critical yet constructive perspective on current challenges and proposes clear directions for action, particularly as the Republic of Moldova is undergoing a comprehensive process of legislative and institutional alignment with European Union standards. Thus, architectural heritage is not perceived solely as a relic of the past, but as a living, renewable, and valuable dimension of sustainable development in Eastern Europe.

MERL-T: A MULTI-EXPERT ARCHITECTURE FOR TRUSTWORTHY ARTIFICIAL LEGAL INTELLIGENCE

by Daniele Allega | Guglielmo Puzio | Universitas Mercatorum, LUISS Guido Carli | LUISS Guido Carli

The application of generic Large Language Models (LLMs) to the legal domain is fraught with risks of opacity, factual inaccuracy, and untrustworthiness, undermining the principles of legal certainty and access to justice. These limitations pose fundamental challenges to the deployment of AI in legal contexts, where precision, accountability, and transparency are not merely desirable features but essential requirements. This paper introduces MERL-T (Multi-Expert Retrieval Legal Transformer), an innovative architecture designed to overcome these limitations through a novel approach that combines domain-specific expertise with transparent reasoning processes. Our primary aim is to propose a practical pathway toward a reliable and transparent Artificial Legal Intelligence (ALI) that can serve as a trusted auxiliary tool in legal practice. We argue that by structuring AI reasoning to mirror the epistemic duality of law—the intricate interplay between abstract principles and concrete rules—it is possible to create a system that is not only technically robust but also inherently auditable and pedagogically valuable. The ultimate goal is to transform legal knowledge into a verifiable digital common good that can benefit institutions, professionals, and learners alike, while maintaining the rigorous standards demanded by legal practice.

The core of MERL-T is a domain-specific, dual-expert architecture that operationalizes legal reasoning in a traceable, end-to-end pipeline. This methodology represents a departure from monolithic approaches, instead embracing the complexity of legal reasoning through specialized components. The system is built on two coordinated modules that work in tandem to provide comprehensive legal analysis. The first component, the Principles module, functions as an expert that reasons over an evolving, community-validated Knowledge Graph (KG). This Knowledge Graph represents the deep structure of legal knowledge, mapping not just entities such as concepts and norms, but also the complex interpretive and doctrinal relationships that bind them together in a coherent legal framework. Through this sophisticated representation, the module provides the abstract, conceptual scaffolding necessary for nuanced legal analysis, enabling the system to understand and navigate the theoretical underpinnings of legal doctrine.

The second component, the Rules module, employs Retrieval-Augmented Generation (RAG) to ground its analysis in concrete, verifiable sources. This expert queries a comprehensive vector database of authoritative texts and retrieves cases and normative content dynamically via updated APIs, ensuring that every claim generated by the system is tied to specific and actual normative or jurisprudential evidence. The coordination between these modules is orchestrated by a learned Router, functioning as a sophisticated gating model that first analyses an incoming query and plans an optimal execution path, intelligently activating one or both expert modules based on the nature and requirements of the query. Subsequently, a Synthesizer integrates the outputs—merging the conceptual reasoning from the Principles module with the evidence-based analysis from the Rules module—into a

single, coherent, and fully-cited response. The entire process is meticulously designed for granular traceability, preserving the provenance of each information fragment from its original source to the final output, thereby ensuring complete accountability in the reasoning process.

The MERL-T architecture is projected to open transformative pathways across multiple dimensions of legal practice and education. In the realm of knowledge management, the Knowledge Graph serves as a living, inspectable core asset that continuously evolves with legal developments. It transforms dispersed and often fragmented legal texts into a coherent, evolving map of legal logic, making the interpretive scaffolding of law legible, navigable, and citable. This innovative approach supports cumulative inquiry and facilitates a deeper structural understanding of the law, enabling researchers and practitioners to explore connections and implications that might otherwise remain hidden in traditional text-based repositories.

From an educational perspective, the system's inherent transparency creates a powerful pedagogical tool that revolutionizes legal education. Students can systematically deconstruct the AI's reasoning process, examining both the graph relations utilized by the Principles module and the specific sources retrieved by the Rules module. This transparency turns every interaction into what can be conceptualized as a "dynamic casebook," fostering critical thinking, source verification, and argumentation skills essential for legal practice. The system thus becomes not merely a tool for finding answers, but a platform for understanding the process of legal reasoning itself.

In the context of law and governance, MERL-T is designed to be "responsible-by-design," meticulously aligning with the stringent requirements of the EU AI Act for high-risk legal systems. Features such as systematic logging, robust data governance protocols, and human-centric oversight mechanisms ensure the system functions as a reliable auxiliary tool that enhances rather than replaces human legal judgment. This careful balance between automation and human oversight is crucial for maintaining the integrity of legal processes while leveraging the efficiency benefits of AI technology.

THE ROLE OF EMOTIONAL INTELLIGENCE IN FINANCIAL DECISION-MAKING AMONG GOVERNMENT SECTOR

by Nuwan Hettiarachchi |Hiranya Dissanayake | Anuradha Iddagoda | Wayamba University of Sri Lanka |Wayamba University of Sri Lanka| University of Sri Jayawardenepura

This study explores the role of Emotional Intelligence (EI) in financial decision-making among administrative employees in the Sri Lankan government sector. Drawing on a cross-sectional survey of 384 respondents, the research examines how the five dimensions of EI—self-awareness, self-regulation, motivation, empathy, and social skills—influence major financial policies, including dividend policy, investment policy, and merger and acquisition decisions. The analysis indicates that self-regulation, motivation, and social skills have strong and consistent effects on financial decision outcomes, particularly in areas related to investment and dividend policies. Empathy shows a more selective influence, proving valuable in investment-related choices but less significant in other financial contexts. Similarly, self-awareness contributes meaningfully to certain decision areas, though its impact on complex decisions such as mergers and acquisitions appears less pronounced. Overall, the findings suggest that cultivating emotional intelligence competencies within public sector leadership can enhance the quality of financial decisions. By strengthening abilities in emotional control, motivation, and interpersonal skills, government managers are better equipped to reduce cognitive biases, promote ethical reasoning, and ensure transparency in financial governance. The study emphasizes the importance of integrating emotional intelligence development into leadership training and capacity-building programs to support more inclusive, responsible, and effective public sector financial management.

WOMEN, DIGITAL INCLUSION, AND AI: ENGINES FOR SIERRA LEONE'S FUTURE GROWTH

by Karolina Kolodziej | University o Bialystok

Sierra Leone, with its diverse population and rich cultural heritage, is one of the world's poorest countries and faces deep socio-economic challenges tied to gender inequality and discrimination. Women continue to work mainly in informal or subsistence agriculture, spend long hours on unpaid household labour, and face exclusion in political participation.

In this setting, digital technologies have become essential for empowerment. Internet access is the gateway, but AI is the engine. Without closing the gender digital divide first, women cannot benefit from AI-driven opportunities. Yet without embedding equality into AI systems, women risk being further marginalised even with access.

Women and girls in Sierra Leone remain at the edges of the digital revolution. Barriers such as cost, limited access to and use of digital technologies, cultural norms, and patriarchal structures restrict them from education, entrepreneurship, healthcare, and civic engagement. At the same time, AI offers both promise and risk: it can amplify women's voices in politics and open new paths to leadership, but if left unchecked, it may reinforce stereotypes and exclusion.

For Sierra Leone, the stakes are high. Without women's full participation in the digital economy and political life, poverty and inequality will persist. By contrast, when compared with countries such as Rwanda—where women's digital and political inclusion has driven rapid innovation and development—it becomes clear that Sierra Leone cannot achieve sustainable economic growth and innovation without women's equal involvement.

GUARDIANS OR TRIGGERS? THE ROLES OF FOREIGN OWNERSHIP AND INSTITUTIONAL DISTANCE IN AFFECTING STOCK CRASH RISK IN INDONESIAN LISTED FIRM

by Shannon Pusura Putri KOSASIH | Felizia Arni RUDIAWARNI | Dedhy SULISTIAWAN | University of Surabaya | University of Surabaya | Univeristy of Surabaya

This study investigates whether foreign ownership and institutional distance affect the likelihood of extreme negative returns, as measured by stock-price crash risk, among Indonesian listed firms. Using weekly return data for the 2019-2023 period, the analysis covers 3273 firm-year observations and controls for lagged stock-price crash risk, firm size, book-to-market, leverage, and return on assets. The results show that foreign ownership significantly reduces future crash risk. Both the foreign-presence dummy and the logged share of the largest foreign holder are negative and statistically significant, with economically meaningful magnitudes relative to the distribution of crash-risk measures. Evidence on institutional distance is more nuanced. Informal (cultural) distance is positively associated with crash risk in some specifications, suggesting that closer cultural proximity strengthens monitoring effectiveness. Formal institutional distance, by contrast, is consistently negative and significant, indicating that investors from stronger institutional environments impose higher governance standards that reduce crash risk. The results remain robust when leverage is excluded from the models, a decision motivated by the fact that many foreign-owned issuers are banks with inherently higher debt ratios. Overall, the findings highlight the governance role of foreign investors in mitigating crash risk and underscore the importance of considering institutional heterogeneity across investor origins. This paper contributes to the literature on external monitoring and crash risk in emerging markets. It underscores the importance of attracting stable, monitoring-oriented foreign capital while accounting for institutional heterogeneity across investor origins.

USING STATISTICAL QUALITY CONTROL CHARTS IN ANALYZING THE STARTUP COMPANY REGISTRATION PROCESS

by Tooraj Karim | Associate professor

A process-oriented view and the use of appropriate tools for process control are very common in production and industrial fields. In the service sector, due to the intangible nature of services, using these tools requires creativity and precision, and if applied, the service delivery process can be improved. Statistical process control charts are one of the common tools in the field of quality, and the company registration process is also a sensitive process in the field of entrepreneurship. In this article, two control charts, P and U, have been used to examine the startup company registration process. Based on the available data, the status of the startup company registration process has been analyzed, and process analyses have been presented based on the results of these charts.

WEAK SIGNALS IN PUBLIC POLICY MAKING

by Ali Hamidizadeh | University of Tehran

Public policy makers often operate in complex and uncertain environments where emerging issues are difficult to anticipate. Weak signals—subtle, early indicators of potential change—can play a critical role in enhancing foresight and preparedness. This paper explores the concept of weak signals in public policy making, emphasizing their value in detecting emerging trends, shaping proactive responses, and reducing the risks of policy failure. It highlights how governments can integrate weak signal detection into policy processes through systematic scanning, stakeholder engagement, and the use of digital tools. By recognizing and interpreting weak signals effectively, policy makers can foster resilience, adaptability, and innovation in addressing future societal challenges.

FROM STEM EDUCATION TO ICT PROFESSIONS: A BIBLIOMETRIC ANALYSIS OF GENDER DISPARITIES AND INNOVATION POTENTIAL

by Carlo Drago | Valentina Giglio Moro | Angelo Leogrande | University Niccolò Cusano | University Niccolò Cusano | LUM University Giuseppe Degennaro

The digital economy depends crucially on the availability of qualified human capital in technical and scientific fields. However, the persistent gender gap in technical education limits both equal opportunities and the innovation potential of the digital transformation. This article examines the gender gap in technical and ICT-related education. A paradoxical dynamic can be observed: women make up a comparatively high proportion of STEM graduates, but are still underrepresented in ICT professions and advanced innovation-oriented roles. In some other cases, however, the opposite is true and women graduate less frequently in STEM subjects. Using a quantitative analysis of the literature, we also examine how gendered educational pathways influence participation in the digital workforce and the ability of companies to innovate. The paper also examines the role of digital learning platforms, study guidance, and targeted policy interventions in reducing barriers, drawing on systematic evidence and recent randomized evaluations. By linking educational inequalities to firm-level innovation performance and digital transformation, our study contributes to the broader debate on inclusive development in the digital economy. The results provide valuable insights for policymakers, educators, and businesses. These insights can be used to promote innovation-driven growth in gender equality. This is a crucial aspect of the global conversation on sustainable, inclusive digital ecosystems

ABOUT CHALLENGES IN TEACHING THE ACCOUNTING

by Iov Daniela Rodica | Damian Aurelia | Paunescu Loredana | Petroleum-Gas University of Ploieşti | Petroleum-Gas University of Ploieşti | Petroleum-Gas University of Ploieşti

Nowadays, working in the financial-accounting field is assumed to rely on a vast amount of skills and knowledge, both theoretical and practical. Our students come at the economic faculties with varying levels of these skills, depending on their high schools curricula. Therefore we have to prepare in the best way our approach, at least in the beginning of teaching process. The more we manage it, the more we shall reach the best achievement. At last all of the students need to learn to identify basic accounting structures, to apply their knowledge in finding the right accounts for bookkeeping any and each economic transaction, to use for that in the correct way the informatic system. In order to reach that goal, we have many scholar disciplines, so its a hard mission to insure a good matching of knowledge steps.

Objective of the scientific research is to establish how we can adapt our choice in the items of our curricula so we should obtain the best learning results for our students;

The scientific research was first based on the documentation on the curricula contents. Also, the authors based their research on the teaching experience during years;

The research leads to some findings that, at least as the authors believe, could be useful, both for students, and for teachers; they identify the best way for all of us to reach our teaching goals, both step by step, and avoiding the inclusion of the same subject in two or many scholar disciplines.

Originality of the paper consists in putting together and comparing the many specialty disciplines, in order to identify and solve any problem and reach our goals.

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PLAY, SOLVE, REPEAT: GAMIFYING QUANTITATIVE DISCIPLINES FOR ENGAGED LEARNING IN HIGHER EDUCATION

by Georgiana Popescu | Ileana Dumitru | Ana Maria Teodorescu | Daniela Curpene | Petroleum-Gas University of Ploiesti, Romania | Petroleum-Gas University of Ploiesti, Romania | Petroleum-Gas University of Ploiesti, Romania | Petroleum-Gas University of Ploiesti, Romania

As experienced teachers in the field of quantitative disciplines like mathematics, statistics, optimization, and informatics, we surely often came across a variety of reactions, mostly stemming from intimidation and/or lack of enthusiasm, when starting to interact with our Economics studies students. For many of them, formulas can look like hieroglyphs, spreadsheets like puzzles, and probability distributions like unsolvable riddles.

The importance of these disciplines is undeniable, if we are tackling analyzing, modelling and solving complex problems; of course, a long history of traditional lectures and teaching doesn't help them with shaking off this feeling. We believe that gamification and other forms of interactive learning can turn abstract numbers into spicy challenges.

Our paper's aim is to qualitatively explore the way gamified strategies turn quantitative disciplines into a motivating, relevant and, why not, enjoyable experience.

While taking into account relevant literature and pedagogical frameworks in higher education, the approach of this study is qualitative, focusing on identifying gamification strategies that can be adapted to the teaching of quantitative subjects.

For example, we believe that for Mathematics, we can create **Escape Room – style challenges; in order to unlock the various stages of a challenge, students tackle mathematical riddles, solve** sequences of problems, such as linear equations or matrix operations, following a fun and engaging scenario. Regarding Statistics, we can use the now classic platforms like Kahoot or Socrative to generate friendly competitions and for Optimization problems, **simulation games can easily spark interest. For instance, students will have limited budgets that they need to manage and learn to allocate between production, logistics, marketing and other areas, in order to maximize profit, while also avoiding** imaginary **bankruptcy.** As Informatics is concerned, we recognize **leaderboard - like challenges** as one of the best motivating ways for students to refine algorithms and models or to design simulations, meanwhile earning points and peer recognition.

Obviously, the above methods are interchangeable, they are not dedicated as such to a certain field or domain. The suggested strategies are conceptually analyzed to highlight how gamified structures can transform students' perception of abstract topics.

The qualitative exploration suggests that gamification transforms learning. Playful competition increases engagement and encourages tackling abstract concepts head-on. Escape Room–style mathematics challenges reduce anxiety while fostering sequential reasoning and collaboration. Simulation-based optimization exercises link theory to practical scenarios, and leaderboard - driven informatics tasks spark motivation and peer

learning. Relevant literature emphasizes the importance of careful design: excessive competition or overuse of extrinsic rewards can distract from meaningful learning.

The originality of this study relies on its focus on gamification in teaching quantitative disciplines in higher education; we feel that this type of approaches is largely underexplored. By combining conceptual insights with vivid examples—Escape Room–style mathematics challenges, resource allocation simulations, and leaderboard - driven programming contests — our paper provides a qualitative framework aiming at making learning interactive and engaging while remaining relevant. Gamification emerges not just as a motivational tool but as a bridge connecting abstract quantitative reasoning and practical applications, showing that even dealing with complex formulas can be an adventure rather than a chore.

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BRIDGING THE GAP BETWEEN ABSTRACT MATHEMATICS AND APPLIED ECONOMICS: MAKING MATH STOP BEING THE VILLAIN

by Georgiana Popescu | Ileana Dumitru | Erik Popescu | Petroleum-Gas University of Ploiesti, Romania | Petroleum-Gas University of Ploiesti, Romania | Petroleum-Gas University of Ploiesti, Romania

Mathematics in economics: the unsung hero or the villain in disguise? For many students, it's the latter—more like a surprise oil spill than a trusty toolkit. This study aims to transform that narrative, showing that mathematics can be the sidekick rather than the antagonist in the saga of economic analysis. By exploring effective strategies for bridging the gap between abstract mathematics and applied economics, this research seeks to make mathematical concepts more approachable and relevant to students. The ultimate goal is to convince students that equations are not monsters hiding under the bed, but clever allies capable of solving real-world puzzles. Understanding optimization, for instance, can be as crucial in economics as predicting market trends—and just like engineers carefully managing operations in a Ploieşti refinery, students can see that a well-placed derivative prevents a “spill” in their calculations. Supply-and-demand graphs become treasure maps to equilibrium, and navigating profit curves can feel like riding a thrilling rollercoaster, where knowing when to speed up or slow down makes all the difference. Math is less Voldemort , more Watson —ready to assist, clarify, and occasionally surprise you with elegant solutions (and maybe even a chuckle).

Employing a mixed-methods approach, this research combines a literature review, analysis of case studies, and evaluation of innovative teaching strategies. The literature review investigates recent findings on student perceptions of mathematics in economics, uncovering familiar fears such as the “derivatives for my coffee?” dilemma . Case studies illustrate successful applications of mathematical tools in various economic scenarios, from profit maximization and market simulations to resource allocation and business decision-making. Teaching strategies emphasize visualization, contextualization, and active learning, including collaborative problem-solving and technology-enhanced simulations. To keep students engaged, micro-analogies and playful examples are used: supply chains can be imagined as intricate clock gears clicking into place like those in the Nicolae Simache Clock Museum (every tick matters, and missing a step can create delightful chaos), profit competition as a friendly race on the Ploieşti Racecourse, teamwork as coordinated plays on the Ilie Oană Stadium (sometimes like scoring a last-minute goal), and fragile systems as the summer without hot water in Ploieşti, where careful planning is required to avoid freezing mid-task. Students can even tackle formulas like they tackle the morning coffee queue—carefully, strategically, and sometimes with mild panic. The goal is to make mathematics approachable and relevant, turning apprehension into appreciation, and perhaps even generating a grin when a tricky formula suddenly “clicks.”

Findings show that student engagement and understanding increase significantly when mathematical concepts are presented in the context of real-world economic scenarios. Optimization problems, financial modeling, and management simulations make

comprehension more intuitive—and sometimes fun enough that students forget they're doing math at all, akin to turning spinach into chocolate. Active learning, teamwork, and technology-enhanced exercises improve both performance and perceptions of mathematics. Micro-analogies help enormously: derivatives as superhero powers predicting future moves, matrices as Tetris blocks that must fit perfectly, linear programming solutions as the perfect pizza slice distribution ensuring everyone gets a fair share, profit curves as thrilling rollercoasters, business decisions imagined as careful maneuvers on the Ploieşti Racecourse, teamwork coordination as strategic plays on the Ilie Oană Stadium, and fragile planning reminiscent of the hot water crisis summer (students shivering through calculations hoping for a warm solution by the end). In short, math stops being the villain and becomes a co-pilot, guiding students through the economic wilds with confidence—and maybe a smile.

This study's originality lies in its holistic approach to bridging abstract mathematics and applied economics. Unlike prior research, which often focuses solely on theory or isolated teaching methods, this study integrates literature, practical case studies, and pedagogical innovations into a unified framework. By emphasizing contextualization, visualization, and active engagement, it proposes strategies that help students not only understand but confidently apply mathematical tools in economics. The playful Ploieşti analogies—Nicolae Simache Clock Museum, Ploieşti Racecourse, Ilie Oană Stadium, petroleum-gas references, rollercoaster profit curves, and the hot water crisis—illustrate complex concepts memorably. This approach aims to boost analytical skills, problem-solving abilities, and perhaps even a sense of humour about math—a rare but welcome bonus in the often intimidating world of economic education.

Adding an extra twist, one of the authors is a student, providing insider perspective and extra "ammo" for understanding the real challenges and perceptions students face. This first-hand view helped craft examples, analogies, and strategies that truly resonate with learners, giving the study a fresh and authentic edge.

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TEACHING ECONOMICS WITH AI: OPPORTUNITIES, RISKS, AND CLASSROOM ADVENTURES

by Ileana Dumitru | Ana Maria Teodorescu | Georgiana Popescu | Daniela Curpene | Petroleum-Gas University of Ploiesti, Romania | Petroleum-Gas University of Ploiesti, Romania | Petroleum-Gas University of Ploiesti, Romania | Petroleum-Gas University of Ploiesti, Romania

What happens when Chat GPT explains economics in Shakespearean English, or Gemini AI invents GDP data for a fictional country? Welcome to the Romanian classroom where AI meets economic sciences! Artificial Intelligence (AI) can be a tutor, a wildcard, or a troublemaker—sometimes all in the same lecture. This study explores how AI tools such as Chat GPT, Gemini AI, Wolfram Alpha, or Quizlet AI are reshaping the teaching and learning of quantitative subjects in economics. The central questions are: Can AI improve comprehension, engagement, and personalized learning? Can it serve as a tutor, a study buddy, or even a secret homework helper? And crucially, how can teachers harness AI effectively while recognizing AI-assisted work, ensuring classrooms remain spaces of genuine learning? Romanian pilot projects provide a unique laboratory to examine these dynamics.

Our approach combined "research detective work" with immersive classroom observation, capturing how AI is actually used, misused and, occasionally, misunderstood. Freely accessible literature on AI in education, focusing on economics and other quantitative disciplines, was reviewed to identify trends, risks, and best practices. Insights were gathered from faculty and students participating in Romanian pilot projects, highlighting successes, challenges, and teacher preparedness—the ability to use AI tools effectively, understand their limits, and detect AI-generated work.

AI brings into the classroom both brilliance and chaos. Students reported higher engagement and faster comprehension with AI-assisted tutorials and exercises tailored to their skill levels. Teachers valued AI's ability to generate adaptive problem sets and provide instant feedback, freeing them to focus on conceptual discussions—or maybe enjoy a long- overdue and much-needed coffee.

Mini-scenes bring the classroom to life: one student asked Chat GPT to explain elasticity, only to receive an answer in Shakespearean English, prompting everyone in the room to lough. Another group used Wolfram Alpha for econometric modeling, producing correct results—but for a fictional country's GDP, sparking an animated debate about assumptions in economic modeling. These moments entertained students but also reinforced the importance of critical thinking and teacher supervision.

Challenges remain: many students rely on AI without fully evaluating its output, and detecting AI-generated work is tricky. Pilot projects underscored the importance of teacher training: educators who understand AI's possibilities and limits guide students more effectively, identify AI-assisted work, and transform potential pitfalls into learning opportunities. From personalized tutoring to plagiarism headaches, the real lesson is clear: the secret ingredient in successful AI integration isn't smarter algorithms—it's smarter

teachers.

Unlike much research focused on STEM or international universities, this study sheds light on the Romanian higher education context, where AI integration in economics is still emerging. By emphasizing practical challenges, ethical considerations, and the essential role of teacher preparation, it provides a roadmap for integrating AI into quantitative economics curricula. Successful AI integration depends not only on technology but also on human expertise: educators who wield AI responsibly and students who use it wisely.

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INNOVATIVE METHODS IN IDENTIFYING NEW CAREER DIMENSIONS IN THE DIGITAL AGE

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The contemporary labour market is undergoing a process of fundamental restructuring, driven by economic, social, ecological, and primarily technological factors. Automation has been a driving force behind economic growth since the Industrial Revolution. However, the current specificity derives from the ability of artificial intelligence to substitute not only manual activities, but also cognitive processes of medium complexity. Researchers have shown that, globally, nearly 400 million workers may need to change their occupation by 2030 due to technological advancements. Although this generates an increase in labour productivity, there is a significant risk of increasing occupational polarisation. Automation and artificial intelligence (AI) are on the path to challenging traditional occupations and replacing them in the new paradigm of work, which includes remote work, automation, robotisation, and digitalisation. The classic, conventional long-term employment contract is being replaced by services provided on a project-by-project, task-by-task, or module-by- module basis, or as one-off orders, which involve short-term commitments and temporary, occasional work. Digital platforms such as Uber, Glovo, Bolt, Upwork, and Fiverr create a flexible yet unstable market in which workers operate under conditions of uncertainty regarding their jobs, without social protection, and without real opportunities to advance professionally or develop their individual careers. From an economic perspective, this favours the entrepreneurial spirit and diversifies sources of income, but from a social perspective, it accentuates vulnerability and occupational precariousness. Remote work opens access to a global labour market, where talent management plays a primary role, but simultaneously presents challenges related to information security and maintaining high labour productivity in the long term. This has also generated new forms of social inequality determined by access to technology and the unequal distribution of digital resources. From a sociological perspective, telework has redefined social capital and reduced informal interactions at the workplace, ultimately leading to adverse long-term effects on group cohesion. In remote work, the emphasis is on results rather than a fixed work schedule. In this case, the employee's autonomy is higher, and the relationship with the employer or client is more flexible. The transformation of the labour market, driven by technology and socio-economic changes, entails a revaluation of the social contract. Automation and artificial intelligence require massive investments in education and retraining. Telework requires rethinking managerial strategies and digital equity policies, which in turn impose regulations adapted to the new realities. Therefore, the central challenge of the near future is to ensure a just transition to the new labour market, requiring additional efforts from both employees and employers, who must find new and creative ways to reach a common denominator. This paper aims to highlight new possibilities, methods and tools that will support human

resources professionals, both in terms of professional career planning and adaptation to rapid changes, stimulating employees' self-confidence, creative thinking, and the need for flexible career guidance. Semiotics offers ideas that can lead to innovative methods combining play, reflection, and symbolic visualisation, facilitating the identification of new dimensions of career in the digital age. Through them, participants can clarify their personal values, building models that represent their abilities and what motivates them the most. In this way, they can explore their professional future. Ideas, scenarios and career development strategies can be expressed through symbolic constructions. Participants can visualise both the opportunities and the risks they identify in the development of their individual careers in the digital age. Semiotic methods enable participants to express their thoughts, values, and vision through a symbolic form, thereby overcoming the limitations of classical verbal language and opening new horizons for development.

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SOCIOECONOMIC IMPACT OF THE SHIFT TOWARDS SUSTAINABLE ENERGY SOURCES

by Sima Violeta | Gheorghe Ileana Georgiana | Petroleum-Gas University of Ploiesti, Romania

Europe is currently facing multiple challenges in the energy sector. In the context of increasing global energy demand, studies have identified the most difficult issues as increasing import dependency, rising prices and their volatility, limited diversification, security risks, growing threats from climate change, but also slow progress in energy efficiency, challenges arising from the increasing share of energy from renewable sources, as well as the need for greater transparency, better integration and interconnection in energy markets. Scholars estimate that the potential of renewable energy exceeds that of other types of energy, being practically unlimited and without adverse environmental effects. Moreover, as over 75% of the world's total energy consumption is responsible for the generation of greenhouse gases, a radical shift towards renewable energy is essential for a sustainable energy future. In these circumstances, energy produced from renewable sources represents one of the solutions for reducing the carbon footprint left in the atmosphere. The transition to energy produced from renewable sources, in response to the challenges posed by the increasing energy demand in the context of the IT sector revolution, alongside climate change, raises new questions for researchers. Thus, they must answer questions regarding the needs and implications that this generates. A significant impact on sustainable development is given by the way in which energy is produced and consumed, because energy must be approached both as a means of production and as a final consumption of the population. To answer these questions, this paper proposes a three- dimensional analysis with a focus on the economic, social, and natural environments, investigating both individually by analysing specific indicators and integrally, aiming to construct a model that allows for estimating the impact of energy produced from renewable sources on economic growth. In the current context, shaped by successive crises, the energy sector has a significant influence on economic growth. The degree of influence, however, differs depending on the level of development of each country. It is estimated that the impact is greater in developing economies compared to developed economies. We have tried to address the green transition of the energy sector and the solutions to stimulate the use of renewable energy, such as: diversifying green financing instruments and encouraging international cooperation, taking into account also opinions that contradict their efficiency, taking into account the fact that the feasibility of a future based on renewable energy is still a subject of debate, both among theorists and technicians. However, most scientists agree on the need to decarbonise the economy.

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ASPECTS REGARDING THE ROLE OF AI IN ECO-INNOVATION AND THE CIRCULAR ECONOMY

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Circular Economy is a fundamental feature in achieving SDG-12 targets. Artificial intelligence (AI) and eco-innovation are two of the most important components that could help to move forward in this direction. Artificial intelligence (AI) possesses a wide range of capabilities in addressing the various challenges associated with maintenance, recycling and repair processes, thereby extending the life of products. This, in turn, contributes significantly to the conservation of resources and raw materials, as well as to reducing the material footprint.

From a regional perspective, AI and eco-innovation may have a substantial impact on the level of regional growth and lessen social and economic inequality.

The main objective of this research is to evaluate the impact of artificial intelligence and eco-innovation towards of circular economy development. By modelling dependency using econometric equations, it is feasible to illustrate how AI and eco-innovation (eco-investment) contribute to the growth of the circular economy.

The AI and eco-innovation specific literature was read in order to achieve the proposed aims, and specific data was generated or processed from official statistics sources (Eurostat). A panel regression model was designed in order to highlight the influence on Circular Economy. The positive results show that AI has a significant impact on CE, even though it has a smaller impact than eco-innovation. The developed model is adaptable enough to allow for the estimation of different equations for any given country.

The most significant awareness is that implementing circular economy requires a number of procedures that need a significant amount of funding and may take years to finish in order to satisfy demands. The analysis highlighted that it is possible to exchange the proxy variables one with another while accounting for specific features of every country.

The study emphasizes the importance of AI and how it may speed up the CE and bring us closer to SDG-12. The authors consider artificial intelligence as an essential part of the existing societal structure due to the geopolitical challenges. Artificial intelligence has the potential to greatly impact territorial growth and the decrease of social and economic inequality at the regional level.

EDUCATION BETWEEN TRADITIONAL AND DIGITALIZATION: GOOD PRACTICES FROM THE EU COUNTRIES

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Humanity has entered an era of knowledge influenced by digital technology. The article analyzes how digitalization and new methods used in education (VR, AR, gamification, etc.) influence the skills level of human capital. Various countries in the EU combine traditional education with digital platforms, with an important impact on future participants on the labor market.

FROM GREEN CLAIMS TO PRODUCT PASSPORTS: WHAT EUROPE'S SUSTAINABLE-CONSUMPTION RULES MEAN FOR FASHION

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Europe's transition from voluntary environmental promises to enforceable, verifiable sustainability requirements is now irreversible. Even with delays to a dedicated Green Claims directive, the European regulatory direction is clear: sustainability information must be based on traceable data, standardized methods, and independent verification. National initiatives, such as Spain's Draft Sustainable Consumption Act, illustrate this shift. Labels and certifications are no longer marketing accessories but instruments of accountability. Seals of approval must be withdrawn if companies fall out of compliance; the criteria behind them must be developed transparently with expert input; and conformity must be verified by independent, technically competent third parties. These are not bureaucratic details—they form the infrastructure that transforms sustainability from narrative to proof.

The emerging framework integrates product policy, market dynamics, and digital innovation. The eco-design regulations promote durability, reparability, and circularity, while the Digital Product Passport (DPP) extends traceability across entire value chains. Each product will carry a digital identity containing verified information such as composition, recycled content, chemical management, and repair options. For the fashion sector, this represents both a challenge and a turning point. Fast design cycles, global supply networks, and energy-intensive processes make it difficult to gather consistent life cycle data. Yet, these same pressures make transparency indispensable. Claims like "sustainable collection" or "carbon-neutral clothing" will no longer be credible without third-party evidence at product level.

The new model redefines sustainability compliance as a combination of governance, data management, and disciplined communication. Governance means having written procedures for how internal scoring systems and eco-labels are designed, reviewed, and corrected when performance declines. Data management requires maintaining verifiable, continuously updated information covering all stages—from raw materials to logistics and use phase—so that external reviewers can reproduce assessments without guesswork. Communication discipline involves stating precisely which product features are being claimed, avoiding vague language, and ensuring that any comparisons rely on consistent methodologies. These practices convert sustainability from aspiration into a verifiable operational standard.

For businesses, the implications are structural rather than cosmetic. Firms that embed these principles early will reduce compliance risks, enhance credibility, and gain competitive advantage. Those that continue to rely on broad, unverifiable claims will face regulatory penalties, label withdrawals, and reputational damage. Public authorities, certification bodies, and universities also have crucial roles to play—by providing coherent

guidance, training qualified assessors, and developing open, affordable tools for small and medium-sized enterprises.

Ultimately, Europe's sustainable-consumption framework establishes a simple but profound bargain: companies that want the reputational benefits of being perceived as "green" must carry the burden of proof. In fashion, this means transforming sustainability into a data-driven, auditable, and digitally connected practice. Those able to integrate transparency, traceability, and verification into their daily operations will not only comply with the new rules but also set the standards others will have to follow.

MAKING ROMANIA RESILIENT FOR NET-ZERO CARBON TRANSITION

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Romania has committed to achieving climate neutrality by 2050, in line with the European Green Deal and the commitments made under the Paris Agreement. Romania's progress towards the "Fit for 55" target—reducing emissions by 55% compared to 1990 levels by 2030—is supported by national policies and access to European funds dedicated to just transition and decarbonisation. However, to achieve the objective of a competitive economy with net-zero emissions, it is necessary to accelerate the decarbonisation of the transport and buildings sectors, strengthen carbon pricing instruments and stimulate private green investments. Romania's updated strategies foresee increasing carbon absorption capacity by expanding the forest fund, integrated management of natural resources and implementing carbon capture and storage technologies for sectors that are difficult to decarbonise. In parallel, public policies underline the importance of protecting vulnerable communities through social justice and climate adaptation measures. The sustainable approach involves institutional reforms, public investments, clear regulations and predictable price signals, complemented by the integration of climate change adaptation planning at all administrative levels. By harnessing the potential for renewable energy, green technologies and the digitalization of the economy, Romania can become a competitive player in green global value chains, ensuring its economic and energy resilience in the context of climate and geopolitical transformations. The transition to net-zero in Romania therefore represents a strategic opportunity for economic modernization, sustainable growth and long-term climate protection.

The main objective of the article is to identify and analyse key policy options and instruments that can strengthen Romania's economic resilience and competitiveness in the transition towards climate neutrality by 2050. The article aims to assess the need to accelerate decarbonisation in high-emission sectors, such as transport and buildings, and proposes additional measures, such as national carbon tariffs, to incentivise green investment and ensure energy security. In this context, the article also examines how these measures can contribute to Romania's integration into global green value chains, ensuring sustainable, fair and climate-resilient growth.

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AI-DRIVEN INNOVATION IN EXPORT BUSINESS MODELS: REDEFINING GLOBAL TRADE DYNAMICS

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Artificial Intelligence (AI) is profoundly transforming global trade by reshaping how firms design, manage, and scale their export business models. As digital technologies diffuse across industries and borders, AI emerges not only as a tool for operational efficiency but also as a strategic enabler of innovation, adaptability, and resilience. This study investigates the multifaceted role of AI as a catalyst for transformation in international commerce, with a focus on how predictive analytics, machine learning, and intelligent automation are redefining value creation, competitive advantage, and global market participation.

The research highlights how AI-driven systems enhance decision-making through real-time data processing, support more accurate market forecasting, and optimize supply chain logistics. For exporting firms, particularly small and medium-sized enterprises (SMEs), AI enables greater responsiveness to external shocks, reduces information asymmetries, and facilitates entry into previously inaccessible markets. By leveraging algorithmic insights, firms can align their pricing, marketing, and distribution strategies with global demand fluctuations, thereby improving performance and sustainability.

In addition to its economic implications, the paper explores the intersection between AI adoption and environmental sustainability. Digital intelligence promotes circular trade practices, resource efficiency, and the decarbonization of logistics networks, contributing to a greener and more resilient global trade system. However, these opportunities are accompanied by new challenges, including ethical dilemmas, data privacy risks, algorithmic bias, and disparities in digital readiness among nations. Addressing these issues requires the development of harmonized international standards, robust governance frameworks, and multidisciplinary collaboration across business, policy, and academia.

Grounded in the resource-based view and dynamic capabilities theory, this study conceptualizes AI as both a strategic resource and a dynamic capability that enables firms to sense, seize, and transform opportunities in global markets. AI-driven insights enhance firms' ability to reconfigure internal and external assets, fostering innovation in export operations and facilitating competitive differentiation. By embedding AI into export strategies, firms not only strengthen their knowledge assets and operational flexibility but also co-create value within global innovation ecosystems.

The paper also underlines the strategic role of Business Export Centers and digital innovation hubs in supporting SME adoption of AI-enabled export practices. These organizations act as facilitators of digital transformation by providing access to shared infrastructures, training, and international networks. By bridging the gap between technology providers, policymakers, and entrepreneurs, export centers empower SMEs to integrate AI solutions into their internationalization processes, scale sustainably, and contribute to smart global value chains. The findings position AI not merely as a technological advancement but as a transformative paradigm that reconfigures export ecosystems and reshapes the logic of international trade. Ultimately, AI-driven innovation fosters a new model of sustainable globalization—one defined by intelligent networks, adaptive capabilities, and shared digital prosperity.

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DE-DOLLARISATION. A NEW TREND SUSTAINED BY BRICS ACTIONS AND WESTERN INABILITY TO FIGHT THE FINANCIAL WAR

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De-dollarisation accelerated after 2022 as BRICS expanded payment rails, reserve diversification, and CBDC experiments while Western sanctions exposed limits of dollar-centric enforcement; these coordinated moves and institutional innovations increase multipolarity risks for the existing financial order.

These abstract analyses the intensification of de-dollarisation since 2022 and its observable manifestations in reserve and settlement practices. Aggregate reserve-share movements and geopolitical drivers show that sanctions exposure and geopolitical distance correlate with lower dollar holdings by some states. Empirical and descriptive studies document growing use of national currencies in bilateral trade, rising central-bank gold purchases, and an incremental shift toward alternative clearing and reserve instruments.

Key mechanisms include the New Development Bank and the Contingent Reserve Arrangement, bilateral swap lines, China's CIPS and push for local-currency settlement, and proposals for a BRICS unit or basket (R5/uniclear) alongside BRICS Bridge experiments. Digital-currency pilots and proposals for regional clearing units aim to reduce dependence on dollar-clearing corridors and SWIFT-based vulnerabilities.

Russia's exclusion from certain Western channels, frozen assets and subsequent push to local settlement and alternative rails illustrate the operational motive for alternatives. CBDC rollout (notably the digital ruble) and coordinated swap/liquidity arrangements are explicitly framed as tools to lower sanctions exposure and sustain trade finance under pressure. Studies link sanctions and geopolitical distance to reserve reallocation and note that concentrated reserve shifts by large holders drive aggregate dollar-share declines. RICS financial institution-building and gold accumulation add strategic depth to alternatives, implying a gradual, place-based erosion of dollar dominance and longer-term policy challenges for Western enforcement and financial governance.

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