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Editors
Dr Tea Kasradze, Caucasus International University, Georgia
Dr Tea Todua, Caucasus International University, Georgia

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Editorial Message

ABEM-CIU Conference

We are pleased to present the official proceedings of the 10th Academy of Business and Emerging Markets (ABEM) Conference, co-organized by ABEM, Canada, and the Faculty of Business and Technology of Caucasus International University in Tbilisi, Georgia. Convened in the Caucasus for the first time, this tenth-anniversary edition-themed "Unlocking Emerging Markets' Potential through Innovation, Technology and Sustainability" brings together a diverse body of scholarly work examining how emerging economies can translate technological change and sustainability imperatives into inclusive and durable growth. The volume gathers researchers and practitioners from Georgia, South Africa, India, Japan, Slovakia, the United Kingdom, Canada, Portugal, France, and the United States, reflecting ABEM's enduring mission of knowledge generation, translation, and transfer across emerging markets.

The contributions collected here speak directly to the conference's three pillars. A first cluster interrogates the frontier of emerging technologies and their stakes for developing economies, from quantum transformation and business preparedness to the geopolitics of the quantum arms race and the dual effects of anthropomorphic AI in banking services. A second advances our understanding of sustainability and responsible governance, including the integration of ESG principles into local government in the digital era, microplastic pollution and waste colonialism, sustainable fashion consumption, the ethics of consumer boycotts, and the environmental economics of apitourism. A third examines leadership, management, and value creation under uncertainty-spanning convergent leadership, cognitive bias in managerial judgment, cross-cultural approaches to management in the age of AI, emotional intelligence at work, the pricing of authenticity in emerging wine regions, the effects of trademark activity and innovative agricultural products on firm value and consumer attitudes, and the role of financial literacy and financial inclusion in shaping mortgage-market accessibility and borrower credit outcomes.

Together, these papers underscore the imperative to rethink how innovation and technology are deployed in addressing the pressing challenges of emerging markets. We trust that the ideas presented in this volume will enrich scholarly discourse and inspire the practical innovations and policy reforms that meaningfully advance both local and global development agendas.

Sincerely,

Editors:
Dr Tea Kasradze, Caucasus International University, Georgia
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Zarnadze, Nino, Caucasus International University, Georgia

TABLE OF CONTENTS

ABSTRACTS

PAPERS

ABSTRACTS

Toward a Theory of Convergent Leadership: Public-Private Value Alignment under Uncertainty

Nino Zarnadze, Caucasus International University, Georgia. nino.zarnadze@ciu.edu.ge

Contemporary organizations operate under conditions of increasing collective uncertainty accompanied by a measurable decline in institutional trust. Recent evidence from the Edelman Trust Barometer reveals a growing crisis of stakeholder interests' alignment: 61% of respondents believe that government and business serve narrow interests rather than the public good; 60% report economic grievance and institutional distrust, and nearly 70% believe that societal leaders intentionally mislead the public. These findings suggest a widening gap among the interests of governments, businesses, and society, highlighting the need for new leadership frameworks that can synchronize competing stakeholder interests. This paper analyses the inherent contradictions among market stakeholders arising from the very nature of their interests. Through conceptual synthesis of utilitarian philosophy, stakeholder theory, and moral philosophy, the paper introduces a new academic framework for organizational leadership- the Theory of Convergent Leadership. By its very nature, Convergent Leadership aims to reconcile opposing stakeholder interests and provide the greatest benefit to the majority. It creates norms and rules for the public and private sectors and serves as each other's mutual constraints in favor of the majority- society and its long-term future. The concept of a theory is grounded in the utilitarian philosophy of Jeremy Bentham and John Stuart Mill, the stakeholder philosophy of Edward Freeman, and the moral philosophy of Michael Sandel. The paper argues that this framework is particularly relevant to emerging economies, where institutional trust is rising, in contrast to declining trends in developed nations. Implications are discussed for organizational governance, public-private partnership, and leadership development under conditions of socioeconomic polarization.

The Cognitive Blind Spot in Management: Antecedents and Consequences of the Dunning–Kruger Effect in Agricultural Businesses

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The Dunning-Kruger effect (DKE) is an infamous illusory superiority cognitive bias in which people who perform poorly at certain tasks erroneously perceive their performance to be superior to that of others. Despite being a metacognitive phenomenon with implications for businesses, it has yet to be directly investigated in relation to managers' problem-solving and thinking skills. As managers are the first authority on their experience with the DKE in business, this study bridges the research gap through a qualitative exploration of the phenomenon, drawing on 20 semi-structured interviews with managers in agricultural businesses. We present a conceptual framework that highlights the antecedents, consequences, exacerbators, and mitigators of DKE in businesses, based on our content analysis. The double burden and ego were the most prominent antecedents to the overconfidence aspect of the DKE. Conversely, the perception that being skilled is common and fear of failure were found to be the most frequently mentioned precursors of the underestimation facet of the DKE. These antecedents mostly lead to jumping to conclusions,

reduced productivity, and overcautiousness in decision-making, respectively. We also found that lack of exposure, among other factors, exacerbated the manifestation and consequences of the phenomenon. Conversely, education and training are primary mitigators of cognitive bias. Overall, our findings underscore the multifaceted nature of DKE in businesses. The DKE's impact may be reliant on certain contextual factors. Although it is apparent that the DKE mostly exhibits unfounded confidence in skills, this phenomenon has another side. Our findings show that in some contexts, under-confidence in abilities is also a prevalent manifestation of the DKE. We go on to prove that the DKE is present on all three levels of management. However, it seems that lower-level managers are more susceptible to cognitive bias.

Quantum Technology Transformation and Business Preparedness

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The rapid evolution of quantum technologies, including quantum computing, quantum communication, quantum cryptography, and quantum sensing, has the potential to disrupt industries and significantly transform traditional business operations. As these technologies mature, they promise to solve complex problems, enable unprecedented levels of security, and create new business opportunities. However, the full-scale integration of quantum technologies into business practices will require organizations to prepare strategically, technologically, and culturally. This paper explores the ongoing transformation driven by quantum technologies and their implications for business preparedness. It examines advancements in quantum technologies and their expected impact across industries such as finance, healthcare, manufacturing, and energy. The paper provides a framework for businesses to assess their readiness for quantum adoption and emphasizes the need to build quantum literacy, foster innovation, and invest in talent development. It also introduces a conceptual model outlining the relationship between quantum technological advancements and business preparedness, offering a roadmap for organizational strategy and change management. The paper concludes by highlighting key opportunities and challenges for businesses as they navigate this technological disruption and underscores the importance of early action to stay competitive in the quantum-enabled world.

When Human-Like Chatbots Backfire: Analysis of Anthropomorphism's Dual Effects on Human Escalation in Indian Banking Services

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This study examines how anthropomorphic chatbot design shapes customers' decisions to continue automated banking interactions or escalate to human agents in Indian banking services. Drawing on Privacy Calculus Theory and Social Response Theory, the study proposes that anthropomorphism has dual effects: it increases perceived competence, but also heightens perceived privacy risk. A quantitative survey of banking chatbot users was analyzed using structural equation modeling and logistic regression. The results show that anthropomorphism significantly enhances perceived competence and privacy risk. Perceived competence reduces escalation, and privacy risk does so as well in this context, indicating that privacy concerns do not necessarily trigger a switch to human agents. Time pressure strengthens the competence pathway, suggesting that customers under time pressure rely

more heavily on anthropomorphic cues when judging a chatbot's capability. Task criticality weakens the influence of privacy risk on escalation, showing that high-stakes service situations shift attention toward resolution rather than risk avoidance. Overall, the findings demonstrate that anthropomorphic design produces context-dependent, not uniform, outcomes. The study contributes to theory by integrating competence and privacy mechanisms. It offers practical guidance for designing AI interfaces in banking that balance efficiency, trust, and data-related concerns for managers and policymakers in emerging-market digital service environments.

How Ubuntu, vasudhaiva kutumbakam, and six degrees of separation lead to effective business management in the age of AI

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Hackers at the Quantum Frontier: Geopolitics, the Quantum Arms Race, and the Stakes for Developing Economies

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Quantum technology has moved from laboratory curiosity to instrument of statecraft. The United States, China, and the European Union have collectively committed tens of billions of dollars to quantum research programs, framing quantum advantage not merely as a scientific milestone but as a determinant of future economic and military power. Yet the discourse surrounding this "quantum arms race" has been dominated by the perspectives of technologically advanced states, leaving a critical question unexamined: what happens to the rest of the world when the cryptographic foundations of the global digital economy are rewritten? This paper examines the quantum arms race through three interconnected lenses. First, it analyses the evolving threat landscape, in particular the "harvest now, decrypt later" strategies already being deployed by state-sponsored and sophisticated criminal hacking groups. Encrypted data exfiltrated today, such as financial records, diplomatic communications, health data, and intellectual property, may be exposed retroactively once quantum computers capable of cryptanalysis become available. For adversaries, the quantum threat is not a future event; it is a present-day opportunity for collection. Drawing on threat intelligence research, we map how hacker communities and advanced persistent threat actors are adapting their tradecraft in anticipation of quantum capability, and how the boundary between state and non-state actors continues to blur. By connecting hacker behavior, geopolitical strategy, and development economics, this paper offers a holistic account of the quantum arms race, one that treats cybersecurity not as a purely technical discipline but as a question of global equity and resilience.

Microplastic Pollution and Our Planet: Assessing the Progress toward Real Solutions

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This paper will explore progress and challenges in addressing the global environmental crisis of plastic pollution, with a specific emphasis on microplastics, which can potentially impact human health. There is a contradiction here: on the one hand, plastic was a transformative

invention in medicine and other areas important to human well-being (e.g., water transport, food preservation, hygiene); on the other hand, it has become a global environmental problem. Waste colonialism is a specific problem in that waste plastic is being exported from the developed world, e.g., the UK, to the Global South, eg India. The highly profitable mass production of virgin plastic from oil and gas — far cheaper than recycling old plastic — means that the largest players in petrochemicals and petroleum production — DowDuPont, ExxonMobil, Shell, Chevron, BP and Sinopec — are all integrated companies that produce both fossil fuels and plastics. Most have their roots in the early decades of the 20th century, when the petroleum and chemical industries began to form alliances and vertically integrated companies. In summary, this paper will analyze plastic particles and examine potential upstream and downstream solutions to the environmental risks to ecosystems and human health.

Purity, Pollution, and Position: Spatializing Ethical Buycotts and Boycotts in Indian Fashion

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Brands regularly face consumer backlash when they are seen as crossing ethical lines. When Sabyasachi, one of India's best-known designers, partnered with the fast-fashion chain H&M in 2021, the reaction was swift and severe. What made this collaboration different from the designer's many earlier tie-ups with Western labels was the scale of the backlash it provoked among consumers and artisans alike. The episode is consistent with a broader pattern documented in prior work: boycotts of fashion brands over perceived ethical lapses tend to be selective rather than uniform. Even as ethics plays a growing role in shaping how people buy clothes, we still know little about how "ethical space" in fashion actually gets built - and how culture, religion, and politics shape that construction. This is a notable gap, given how far the idea of ethical fashion has traveled as consumers push brands toward greater social and environmental accountability. This paper examines the case of Sabyasachi, an Indian designer whose collaboration with fast-fashion retailer H&M triggered a consumer boycott, to show how consumers treat certain fashion spaces as "sacred" and react strongly when that sanctity is perceived as breached.

Attitudes towards Fashion Brands and Sustainable Consumption in Georgia

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Fashion brands are increasingly required to produce sustainable clothing, as clothing production consumes large amounts of natural resources. This research investigates consumer attitudes towards fashion brands and towards sustainable clothing consumption. The research uses quantitative survey methods. The survey was conducted in Georgia during February-May 2026 using a structured, self-administered questionnaire. A total of 385 consumers participated in the survey, ensuring a representative sample. Data analysis was conducted using SPSS. Descriptive and correlation analyses were conducted. The research results show that consumers differ in their brand loyalty. For them, the brand is a source of self-expression and satisfaction, which helps them feel good and make the desired

impression on others. Interestingly, participants noted that they would continue to purchase products from their favorite brand regardless of its eco-friendliness and sustainability. In contrast, 40% of survey participants either disagreed or were neutral with the statement that they would buy clothes from their favorite brand if it were not sustainable. At the same time, consumers are unwilling to pay high prices for products from their favorite brands. Research findings demonstrate that effective marketing strategies can improve consumer attitudes towards sustainable fashion brands and change consumers' perceptions of their favorite brands. Fashion companies need more marketing activities to increase brand loyalty. Notably, changes in consumer attitudes towards a brand depend on the brand's sustainability and price. The results of this study are significant for the sustainable fashion industry, particularly in emerging countries, for planning and implementing appropriate marketing strategies. This research contributes to the scientific literature on sustainability branding and sustainable fashion marketing. In addition, fashion marketers and professionals can develop branding and marketing communication strategies based on the results of this study.

Economic Opportunities and Environmental Challenges of Apitourism in Canadian Landscapes

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Apitourism is considered one of the most sustainable forms of travel, which involves learning about bees, beekeeping, and their important role in preserving biodiversity, while also promoting local tourism through aspects such as local food and connection with nature. This paper, using a case study approach, examines the dual facets of apitourism in Canadian landscapes—economic opportunities and environmental challenges. With the growing interest in sustainable tourism, apitourism has emerged as a niche sector that promotes honeybee conservation while providing economic benefits to local communities. The integration of apiculture into tourism not only supports biodiversity and ecosystem services but also stimulates local economies through job creation and increased revenue. However, this burgeoning sector faces significant environmental challenges, including habitat degradation and climate change, which could threaten bee populations and, by extension, the apitourism model. This study aims to highlight the need for balanced approaches that foster economic growth while ensuring environmental stewardship. Recommendations for sustainable practices within the apitourism sector will be discussed, underscoring the importance of collaborative efforts among stakeholders to mitigate adverse environmental impacts and promote long-term sustainability in Canada's diverse beekeeping landscapes.

Medium-Term Effects of Quantitative and Qualitative Shocks in Trademark Activity on Firm Value: An Empirical Analysis Using Local Projections

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This study investigates how firms' trademark portfolios influence corporate value over a medium-term horizon by examining the dynamic responses of Tobin's q to trademark-related shocks. Using panel data on all publicly listed firms in Japan from 2009 to 2024, the analysis distinguishes between quantitative shocks—captured by changes in the number of trademarks owned by each firm—and qualitative shocks —defined by improvements in

trademark quality indicators. The Local Projection Method is employed to estimate impulse response functions that trace the evolution of firm value over three years following each type of shock. The empirical results reveal that qualitative shocks consistently lead to positive, statistically significant increases in Tobin's q, suggesting that improvements in trademark quality meaningfully enhance firm value. In contrast, quantitative shocks exhibit weaker, largely insignificant effects, indicating that simply increasing the volume of trademark applications does not necessarily strengthen corporate value. Additional analyses reveal substantial heterogeneity across industry sectors, suggesting that the economic relevance of trademark activity varies with firms' competitive environments and strategic positioning. Overall, the findings underscore the importance of considering both the qualitative dimensions of trademark portfolios and firm-level heterogeneity when evaluating the role of intellectual property in shaping medium-term corporate performance.

Pricing Authenticity and Sustainability: Marketing Strategies of Urban and Rural Wineries in Emerging Wine Regions

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The expansion of wine production in emerging economies has increased interest in how wineries create value and set prices in different spatial contexts. Drawing on marketing theory and spatial economics, this study examines pricing strategies among urban and rural wineries in China, South Africa, and selected Central and Eastern European wine regions. Using qualitative methods, including semi-structured interviews and a case study approach, the findings reveal distinct pricing approaches. Urban wineries primarily employ value-based pricing supported by experiential offerings, wine education, lifestyle positioning, and sustainability initiatives. Rural wineries rely more strongly on authenticity-based and cost-plus pricing, emphasizing regional identity, cultural heritage, wine tourism, and environmental stewardship. Sustainable and green wine practices are emerging as an additional source of differentiation, though wineries face challenges communicating and monetizing their environmental investments. Across all cases, pricing is shaped more by consumer perceptions of authenticity, sustainability, and experiential value than by market power. The study contributes to understanding how spatial context and economic development jointly influence value creation and price positioning in the contemporary wine industry.

Emotional Intelligence: A Catalyst to Support Work Productivity

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Incorporating emotional attributes such as kindness, professionalism, or fierceness is essential to cultivating appropriate levels of vulnerability and humanity in the workplace. Yet many early-career adults do not know how to harness their positive emotions to support productivity at work. This session is designed to support HR professionals in understanding the essential role of emotions in employees and to provide strategies to strengthen employees' emotional resilience and intelligence through team building and reflection. Such

efforts can cultivate the soft skills essential for business success, such as helping employees effectively manage their emotions to enhance relatability, tone, and communication. Team-building activities provide opportunities for employees to engage in scenarios that reflect their capacity for emotionally intelligent behavior. Exploring the "why" of particular emotions can help everyone reflect on their values, voice, and contributions to the company. Such activities honor and support the holistic nature of human flourishing in the workplace. Accordingly, this interactive session combines lectures and reflective exercises to help attendees explore their own emotional landscape and develop strategies for working with employees who face emotional challenges.

A Study of Consumers' Attitudes toward Innovative Agricultural Products: Evidence from Georgia

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The successful commercialization of innovative agricultural products largely depends on consumer acceptance, yet evidence on consumers' attitudes toward such products in the Georgian agri-food sector remains limited. This study examines the effects of perceived usefulness and perceived ease of use on consumer attitudes by applying the Technology Acceptance Model. A cross-sectional quantitative research design was employed using a structured questionnaire, and the proposed relationships were examined through descriptive and inferential statistical analyses. The findings indicate that both perceived usefulness and perceived ease of use positively influence consumers' attitudes toward innovative agricultural products, with perceived usefulness demonstrating a comparatively stronger influence. The study extends the Technology Acceptance Model to the agri-food sector in Georgia and offers practical implications for producers, marketers, and policymakers. The findings suggest that successful commercialization requires not only delivering valuable product benefits but also communicating those benefits in a clear, understandable, and consumer-oriented manner.

The Impact of Financial Literacy and Financial Inclusion on Mortgage Market Accessibility and Borrower Credit Performance in Georgia

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Access to housing finance is a cornerstone of household welfare and long-term economic stability. However, obtaining and managing a mortgage depends on two interrelated conditions: financial literacy, which shapes the demand side by enabling borrowers to understand product terms and make sound credit decisions, and financial inclusion, which shapes the access side by determining who can enter the formal financial system. While their combined influence has been studied extensively in advanced economies, evidence from emerging markets, where mortgage markets are often shallow and foreign-currency lending exposes borrowers to additional risk, remains scarce. This study addresses that gap for Georgia, a country where financial inclusion has advanced considerably while financial literacy has remained persistently low. The analysis draws on aggregated national annual data for 2016-2025 and estimates multivariate linear regressions in which mortgage-market

accessibility is proxied by the ratio of private-sector credit to GDP and borrower credit performance by the share of non-performing loans. The results show that greater financial inclusion is associated with improved accessibility and a lower share of non-performing loans, whereas higher loan dollarization is associated with weaker credit performance - directions that are consistent with prior research and theory, though limited in statistical strength by the small sample, multicollinearity, and the near-constant level of financial literacy across the period. As the first Georgian study to examine the joint influence of financial literacy and financial inclusion on the mortgage market, the paper offers policy directions centered on strengthening financial education, mitigating dollarization risk, and providing targeted support for vulnerable borrowers.

Integration of ESG Principles into Slovak Local Governance: Challenges and Opportunities in the Digital Era

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Environmental, Social and Governance (ESG) frameworks are increasingly relevant in public administration as societal expectations for transparency, accountability and sustainability grow. This study explores the potential to implement ESG principles within local self-governments in Slovakia. Using a qualitative, conceptual approach, it analyses 37 secondary sources and applies the PRISMA methodology to ensure systematic and transparent processing. The findings show that Slovak municipalities already carry out activities aligned with ESG criteria—particularly in environmental management, community well-being, transparent governance and responsible decision-making. However, these activities are not yet measured or reported through formal ESG indicators due to the absence of a standardized evaluation methodology. Communication and digitalization emerge as key drivers of effective ESG adoption at the municipal level. The study also outlines phased steps for sustainable development based on an analysis of the critical literature. Limitations arise from reliance on secondary data and the evolving nature of ESG terminology, yet the research provides a foundation for future empirical studies.

Keywords: ESG, digital transformation, communication, local governments, transparency

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Introduction

Almost 48 years ago, the United Nations published the Brundtland Report (1987), a sustainability report that introduced the three pillars of environmental, social, and economic sustainability. As is well known nowadays, ESG stands for "environmental, social, and governance." In the report, the ESG concept is a framework that emphasizes non-financial factors influencing an enterprise's long-term success. ESG criteria comprise environmental sustainability, social impact, and the quality of a company's governance practices. Changes in European Union regulations, the growing importance of sustainable investment, and societal pressure for responsible businesses are leading to the integration of environmental, social and governance dimensions into the strategic management of entities, including public and other specific-interest entities. Most studies or analyses are conducted on financial entities such as publicly traded companies, banks, or municipal enterprises. The reason is that these types of enterprises play a key role in the transition to a sustainable economy. However, in this article, the research subjects will be public-interest entities and specific-interest entities in Slovakia. Entities of specific interest are mainly municipal governments, cities, towns, or villages. The functioning of Slovak municipal governments, i.e., municipalities as entities of specific interest, is examined, where ESG are conceptually linked with the ideas of smart cities and digital transformation, highlighting the role of technology, citizen participation, and responsible governance in fostering sustainable municipal development. The main aim of the article is to study theoretical thresholds in greater depth from an ESG perspective, within the framework of specific interest entities. In Slovakia, building on the international STICS project framework, efforts to develop the concept of smart cities, towns, and villages have gradually begun to incorporate technology, participation, sustainability, and cooperation between the public and private sectors to achieve the common goal. Based on the results of this concept, it will be possible to understand how municipal governments in the Slovak Republic implement ESG policies to support sustainable development.

Municipal governments strive to provide a wide range of services to their communities. They include recreational and cultural facilities, waste management, family and community services, land use planning and building control, public health services, domestic animal control and environmental protection legislation, and local infrastructure including town halls, schools, libraries, parks and gardens, roads, and bridges (Armstrong & Li 2022, Nováčková et al. 2018, Saxunova et al. 2021). However, it is widely recognized that the responsibilities of local authorities extend beyond the provision of local infrastructure and local services to include an obligation to deliver more holistic approaches to the well-being of their communities (Dollery 2014). This has become more critical than ever post-COVID-19. ESG principles originated in corporate finance, yet their relevance to public administration is increasingly evident, particularly in the context of sustainable governance and alignment with initiatives such as the European Green Deal and the UN Sustainable Development Goals (Garefalakis et al. 2025). Local government units (LGUs) bear an implicit responsibility to society for the public value they create (Fusco and Ricci, 2019). Municipal governments often participate in regulatory governance, licensing, subsidy allocation, and partnerships with businesses. Through these roles, they can influence local economic and environmental practices, for example by encouraging more sustainable heating or energy infrastructure within their communities (Wójtowicz 2024).

Global successes and plans for Smart Cities Market development worth highlighting include the global smart cities market size, estimated at USD 877 billion in 2024 and projected to reach USD 3,758 billion by 2030, growing at a CAGR of 29% from 2025 to 2030. Market growth is primarily driven by rapid urbanization, placing pressure on governments and municipalities to adopt sustainable, efficient city-planning solutions, as trends and insights emerge (Table 1).

Table 1. Global Trends and Insights

Segment	Insights
Smart utility segment	dominated the global market and accounted for
The Asia Pacific smart cities market	52% revenue share in 2024, the largest market in 2024
The U.S. Smart Cities market	a market share of over 27% in 2024
Smart transportation, the intelligent transportation system segment	the largest market share in 2024
Smart healthcare, the systems & Software segment	expected to witness the highest CAGR from 2025 to 2030

Source: Grand View Research 2025

Theoretical Framework

From the perspective of the Slovak Republic legislation, "subject of public interest" according to § 2 par. 16 of the Act on Statutory Audit 423/2015 Coll (2015). Public-interest entities are subjects of public-interest, such as an accounting entity that has issued securities and which have been admitted to trading in a regulated market of any Member State, an accounting entity preparing consolidated financial statements of the central government, a bank and a branch of a foreign bank, a supplementary pension company, a pension management company, the Export-Import Bank of the Slovak Republic, the Stock Exchange, an insurance company and a branch of a foreign insurance company, a reinsurance company and a branch of a foreign reinsurance company, the Railways of the Slovak Republic, a health insurance company. a management company and a branch of a foreign management company, a higher territorial unit, an accounting entity that is a municipality, city or urban district according to special regulations, i.e. meeting certain defined size criteria (Act 423/2015 Coll. Act on Statutory Audit (2015).

Nevertheless, as public institutions managing public resources, they are often considered to be public-interest entities in a broader sense, especially in the context of: firstly, implementing public policies (e.g. sustainable mobility, social services), secondly) creating and managing budgets with a direct impact on residents, and finally drawing resources from EU funds (Act No. 583/2004 2004, EC 2020). Although local/municipal governments are not commercial entities, ESG approaches are relevant for public oversight and responsible management of public finances, for obtaining external financing (e.g., ESG funds, green bonds), and for the comparability of performance and ratings (Matviaková, 2024).

When we look at municipal government as a specific- interest entity (former public-interest entities), cities and municipalities of the Slovak Republic are entities that manage public resources, provide basic public services, and have a direct impact on the quality of life (Act No. 369/1990 (1990); OECD, 2020). Environmental, Social and Governance (ESG) criteria represent a multidimensional framework that is increasingly applied not only in the corporate sphere, but also in public administration, including local governments (United Nations 2015, European Commission 2019). Regarding the EU legislation associated with ESG kriteria research should be focused on a) Environmental dimension (E): measures to reduce greenhouse gas emissions, efficient energy and waste management, increasing the share of green areas and adaptation to climate change (Ministry of the Environment of the Slovak Republic, 2023); b) Social dimension (S): evaluates phenomena, such as equality of access to services, public participation, cultural inclusion, community programs (OECD 2019, UN 2015) and c) Governance dimension (G): assesses quality of strategic planning, transparency, open data, management ethics and participatory budgeting (Transparency International Slovakia 2023, INEKO, 2024). Effective from June 1st, 2024, in Slovakia, municipalities were moved to a new category of so-called entities of specific interest, distinct from public-interest corporations and financial institutions.

Table 2. Municipalities, Towns & Urban District Reclassification into Entities of Specific Interest

Act on Statutory Audit 423/2015 Coll and its amendment	
§2 par. 16 of the Act on Statutory Audit	*Section 2, §15, letter f) of the Act on Statutory Audit, the 4th point*
January 1st 2010 – November 10th, 2015. *November 11 th, 2015 – May31st, 2024*	*Since June1st, 2024 →*
Entity of Public-interest changed into	**Entity of Specific-interest**
Common definition: An accounting entity that is a municipality, city or urban district according to special regulations for the accounting period preceded by at least two immediately consecutive accounting periods in which it met at least one of the following conditions:	
i) ∑ total assets > 100,000,000€[1]	i) ∑ total assets[2] > 70,000,000 €
(ii) the number of inhabitants > 50,000.	(ii) the number of inhabitants > 30,000.

Source: *Act 423/2015 (2015) Coll. Act on Statutory Audit, amended in 2016 and 2024.*

This separation is logical because the majority of municipal governments are not-for-profit organizations; some municipalities have established a business entity that earns money by providing certain services for the community or district. These municipalities must publish the financial statements of their enterprises on their web page. The "size" criteria for classifying a municipality or city into the new category of "specific-interest" entities are also slightly changing (Table 2), but the new classification highlights and focuses on specific-interest entities where the ESG concept should be implemented thoroughly.

The smart cities theory combines theory and practice in real life. Therefore, it is appropriate to define the term smart cities. One of the most widely used definitions of smart cities comes from the European Commission (2014): "A 'smart city' is a place where traditional networks and services are used more efficiently thanks to digital solutions. A smart city uses information and communication technologies (ICT) to improve the quality of life, the efficiency of services, and reduce environmental impact – all in the spirit of citizen engagement." The widespread integration of IoT and connected devices across infrastructure systems is enabling real-time data collection and management. Rising investments in smart infrastructure, including smart grids, intelligent transportation, and e-governance platforms, are significantly accelerating market growth. Advancements in communication technologies such as 5G and edge computing are further enabling seamless connectivity and supporting the deployment of advanced urban applications, which are expected to drive expansion in the smart cities industry. An important term to connect this matter is the definition of digital transformation. According to Vial (2019), it represents the strategic use of digital technologies to change how organizations operate, provide services, and create value for their users or citizens. It is a systematic change that goes beyond technology and also includes cultural, organizational, and process innovations. In 2020, the OECD supplemented this definition as follows: Digital transformation is the implementation of information and communication technologies (ICT) across all areas of organizational management. This process leads to improved efficiency, transparency, innovation, and participation, while supporting the transition to data-driven decision-making (OECD, 2020b). In the context of public administration, digital transformation means the transition from traditional, paper-based or manual processes to intelligent, connected and digitally processed systems. It enables better access to public services and open data, as well as faster communication between citizens and institutions (United Nations 2022). According to the European Commission (2021), digital transformation "involves the adoption of digital technologies in all sectors of the economy and public administration, fundamentally changing the way people live, work and interact". This definition emphasizes the need for inclusive and sustainable digital development as part of the so-called Digital Decade 2030.

Methodology

The study has a qualitative and conceptual character and aims to analyze the potential implementation of ESG principles within the context of local self-government in Slovakia. The methodological approach is based on a qualitative analysis of secondary sources, and the entire process was structured in accordance with the PRISMA principles to ensure transparency, clarity, and consistency in identifying, screening, and synthesizing the literature.

Identification and Selection of Sources

The analysis draws on the sources listed in the References section, comprising 37 records published between 2008 and 2025, along with one foundational report from 1987 that established sustainability as a concept. A more detailed breakdown of the sources according to ESG dimensions is presented in Table 3. These sources comprise: a) peer-reviewed scientific articles retrieved from Scopus, Web of Science and Google Scholar, b) political, legislative, and strategic documents issued by the European Commission, OECD, United Nations, and ministries of the Slovak Republic, c) expert monographs and analytical reports (e.g., INEKO, Transparency International Slovakia), d) statistical data provided by the Statistical Office of the Slovak Republic. The sources were identified based on their thematic relevance to ESG, smart cities, digital transformation of public administration, governance, and transparency in local government.

Table 3. Categorization of Sources According to ESG Dimensions

PRISMA category	Sources	Total
Peer-reviewed articles	Alcaraz-Quiles et al. (2014); Armstrong & Li (2022); Cao et al. (2023); Čičmancová & Soviar (2024); Dollery et al. (2014); Fusco & Ricci (2019); Garefalakis et al. (2025); Kang (2019); Kazancoglu et al. (2020); Lukáč et al. (2021); Matviaková (2024); Nie et al. (2023); Varmus et al. (2018); Novačkova et al. (2018); Saxunova et al. (2021) ; Vial (2019); Wójtowicz (2024)	**17**
Policy / institutional documents	European Commission (2014); European Commission (2019); European Commission (2020); European Commission (2021); European Commission (2022); Ministry of the Environment SR (2023); OECD (2019); OECD (2020a); OECD (2020b); United Nations (2015); United Nations (2022), City of Bratislava (2022), Brundtland Report (1987)	**13**
Books / monographs	Kubica (2008); Saxunova et al. (2022)	**2**
Data / analytical & web-based sources	Grand View Research (2025); Statistical Office of the Slovak Republic (2024); Transparency International Slovakia (2023), Dzurovčínová &Posypánková (2022)	4
Other practical / industry sources	Bratislava innovation Strategy (2022)	1

Source: Elaborated by the authors

Inclusion and Exclusion Criteria

These criteria were used to deepen the focus on the matter under exploration and to inform the decision-making process regarding what is relevant to our research.

Figure 1. PRISMA – Identification, Screening, and Selection Process

Identification – records identified (n=44)
Screening – records screened (n=44) All identified sources were screened based on tiels and available abstracts. As the list represents a curated selection by the authors, no duplicates were identified; no source was excluded at this atage. **Full text assessed for eligibility (n=37)** All sources were examined in full text to assess their relevance to ESG, local government and goverance or digital transformation.
Included in qualitative synthesis (n=37) All 37 sources were included in the final qualitative synthesis, as they met the inclusion criteria and provided theoretically or practically relevant insights.

Source: Processed by the authors

Inclusion criteria: have comprised a) sources thematically focused on ESG, sustainability, communication, transparency, smart cities or digital transformation, b) publications related to public administration, local government or public-interest entities, c) documents and analyses concerning legislative or policy frameworks relevant to Slovakia. Exclusion criteria: have included a) sources unrelated to public administration or local government, b) duplicates (particularly in the case of institutional and legislative materials), c) documents lacking methodological description (except for official institutional outputs).

Analytical procedure

The qualitative analysis proceeded in three steps: Thematic categorization of sources according to ESG dimensions (environmental, social, governance). Comparison of findings between Slovak and international studies, with an emphasis on specific features of local self-government in Slovakia. Synthesis of results, aimed at identifying key elements, challenges, and opportunities for implementing ESG at the municipal level and formulating a set of suitable indicators for future empirical research (Figure 1). A more detailed thematic classification of the reviewed sources according to ESG dimensions is presented in Table 4.

Table 4. Categorization of Sources by ESG Dimensions

ESG category	Sources	Count
E – Environment (environmental dimension)	European Commission (2019 — Green Deal); Ministry of the Environment SR (2023); Grand View Research (2025 — smart utilities, mobility), Kazancoglu et al. (2020 — circular economy); Kang (2019 — sustainable development communication); Varmus et al. (2018 — long-term sustainability); Statistical Office SR (2024 — environmental data),	6
S – Social (social dimension)	Kubica (2008) — municipal communi-cation; Transparency International Slovakia (2023 — transparency & partici-pation); OECD (2019 — well-being); OECD (2020a — inclusive growth); Kang (2019 — citizen engagement); Nováčková et al. (2018 – social aspect for communities, so as Saxunova et al. 2021); Alcaraz-Quiles et al. (2014 — online sustainability reporting); Armstrong & Li (2022 — local services & community well-being); Dollery et al. (2014 — community sustainability); Varmus et al. (2018 — stakeholder cooperation)	11
G – Governance (governance, transparency, financial health)	Lukáč et al. (2021 — financial performance of municipalities); Čičmancová & Soviar (2024 — online sustainability & municipal governance); Fusco & Ricci (2019 — public sector accounting); European Commission (2022 — CSRD); OECD (2020b — Digital Government Index); Vial (2019 — digital transformation governance); Nie et al. (2023 — debt & governance); Cao et al. (2023 — debt & ESG performance); Wójtowicz (2024 — ESG reporting of cities); Garefalakis et al. (2025 — ESG indicators in BSC for LGOs); Saxunová et al. (2022 — governance integrity); European Commission (2021 — Digital Compass);	12
ESG – multidimensional (covering E, S&G)	United Nations (UN)(2015 — SDGs); UN (2022 — E-govern-ment); Brundtland report (1987 – sustainability defined); European Commission (2014 — Smart Cities EIP); European Commission (2020 — cohesion policy & sustainability); Matviaková (2024 — ESG funds for municipalities); European Commission (2021 — digitisation & governance with environmental intersections); City of Bratislava (2022 — Urban Innovation Strategy)	8

Source: the authors

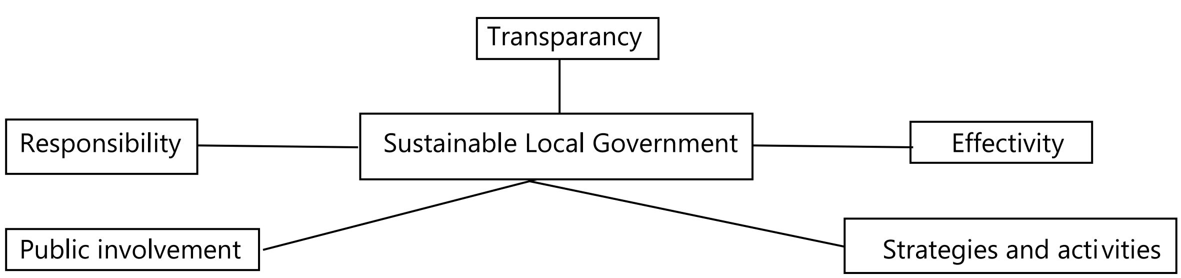
Results and Discussion - Current Studies from Local Governments

The first study investigated was Čičmanová and Soviar's (2024). They analyzed 116 Slovak municipalities with respect to online transparency, ESG communication, and participation. They found that larger municipalities exhibit higher levels of ESG activity, whereas small municipalities tend to fall short in social responsibility and governance mechanisms. Moreover, they concluded that local governments were influenced by several factors (see Figure 2 for more details). These five elements/factors can be considered as the basic pillars that a local government must have firmly embedded in its functioning; otherwise, it cannot be managed sustainably (Čičmanová & Soviar 2024). "Moreover, municipalities are considered to be key actors in waste management and recycling activities" (Kazancoglu et al. 2020). Kubica (2008) considered communication within local government to be very important. In his research, he distinguished between internal and external communication. He considered internal communication to be communication with local government employees about changes and plans. He considered external communication to be the transfer of information from within the office to external stakeholders. The main elements of both internal and external communication should be transparency, openness, and timeliness. Varmus et al. (2018) considered communication very important and examined it from a formality perspective. They argued that: "Not only formal but also informal communication is important, such as the dialogue between the municipality and cultural and sports organizations or other interest groups." According to Kang (2019) and Alcaraz et al. (2014), online communication is also crucial and very beneficial for local governments. Online communication is much faster and inherently a high-quality, effective tool for connecting and sharing information and important data between local governments' internal and external worlds.

In the context of sustainability in local government, Kress (2005) and Genc (2017) identified three key communication relationships (see Table 5), which are essential for the successful implementation of sustainable management and the achievement of goals in the municipality. Matviaková (2024) found that cities should use ESG funds, green bonds, and PPP partnerships to finance sustainable projects (transport, energy, education). In her article, she linked ESG principles with innovative financing and municipal budget stability. Lukáč, Regrut, and Fabuš (2021) analyzed the financial health of Slovak cities using cluster analysis.

Although the study does not directly use ESG terminology, it provides a methodological framework that can be combined with ESG indicators (e.g., debt burden, operating surplus, liquidity). Ligušová and Spáčilová (2023) examined the extent to which local governments reflect the environmental and social dimensions of sustainable development (SDGs), with several of them overlapping with ESG criteria.

Figure 2. Characteristics of Local Government Sustainable Management



Sources: Čičmanová & Soviar 2024, Procházková 2011, Jankelová, Čajková & Larionova 2018

Table 5. Communication-Sustainability Relationship

Relationship	Direction	Basis	Aim
Communication about sustainability	Both ways (discussion)	Perceiving sustainability issues, structuring facts, and framing concerns	Achieving a certain level of awareness to determine the implementation of the SD
Communication of sustainability	One way	Expression of experts, educators, scientists, journalists	Capturing public attention and educating about issues
Communication for sustainability	One or both ways	Strong encouragement of debate, willingness to express and participate in SD	Setting the stage for social transformation based on the objectives of the SD

Sources: Čičmanová & Soviar 2024, Kress, 2005, Genc 2017

The inspiration can also be found abroad. Foreign authors, for instance in China, explored the impact of local government debt on ESG performance. In addition, we may say that, already at the beginning of the 20th century, ESG thinking and concepts converted into practice may be traced in the work of the entrepreneur Thomas Bata, who built his Batavilles worldwide. However, this was not debated at the time. He, as a responsible entrepreneur or a responsible mayor of the municipality of Zlín, proclaimed that "financial recovery must be preceded by moral recovery. Bata considered moral poverty the cause of the crisis and the economic decline its consequence (Saxunová et al. 2022). He was a strong supporter of integrity and honesty in business; one of his credos was that honest businessmen behave responsibly and pay their debt. In current papers, we observe that local government debt pressure has a significant negative effect on corporate ESG performance. "Their research reveals that debt pressure weakens ESG performance by aggravating financial constraints and diminishing the capacity for green innovation (Nie, Liu, Zeng & You 2023)". From an ESG perspective, such economic instability and financial strain can pose obstacles to the commitment to sustainable and socially responsible business practices (Cao et al. 2023).

Table 6. Bratislava - as a Smart City Example: Not Perfect but Improving.

Urban Innovation Strategy	Focuses on mobility, climate adaptation, energy neutrality, and data-driven governance
Bratislava City Lab	A pilot platform for testing smart solutions before full-scale deployment
Digital Services	Prioritizes user-friendly public services using design thinking and AI.
Smart Neighborhoods:	Bratislava III is developing smart housing, health monitoring, and energy-efficient buildings.
Sustainability & Mobility	
Member of Eurocities Network	Collaborates on CO_2 reduction and the adoption of green tech.
Smart Mobility	Emphasis on electric vehicles, smart traffic systems, and public transport upgrades.
Innovation Ecosystem	Strong academic presence but low SME innovation and weak business-city collaboration.
Plans to build a quintuple helix model (public-private-academic-civic-environmental	

Source: Bratislava innovation

We came to the conclusion based on the studied resources that the implementation process should focus on researching the sustainable development of municipalities in three phases: At first, it is recommended:

(1) To comprehend any municipality and to map any sectors within the municipality area, because they will contribute in symbiosis in the process of sustainable growth. (2) Then to make smarter decisions supported by effective communication within a triangle: municipality- industry- and the community life that would lead to developing an informed opinion of the triangle's future by analyzing emerging trends. (3) Finally, to support the growth of the municipality with the support of growing industry in the area, resulting in a sustainable and well–being community. We may conclude that drivers of sustainable development in communities lie in improvement of a) infrastructure and innovation strategies, b) sustainability efforts, c) EU engagement, EU funding, and d) key challenges coping continuously. To raise awareness of digital services, design thinking, as a tool for digital transformation, may be useful in the sustainable development process. Lastly, we present the results for the municipality of Bratislava for illustration (see Table 6).

Limitations of the Study

This study has several limitations that should be considered when interpreting the findings. Firstly, it adopts a qualitative and conceptual approach based exclusively on secondary data sources. As a result, the analysis does not incorporate primary empirical data from Slovak municipalities, which may influence the extent to which the conclusions can be generalized. Secondly, the selection of sources represents a curated set of materials compiled by the authors. Although the process was structured according to PRISMA principles, the body of available literature on ESG in the context of Slovak local self-government remains limited. Consequently, some aspects of ESG practice at the municipal level may be underrepresented or insufficiently documented. Thirdly, the terminology and practical application of ESG within public administration are relatively new and rapidly evolving, driven by ongoing legislative developments at the European Union level. This implies that some of the findings may change over time as new regulations and reporting obligations are introduced. Despite these limitations, the study provides an important theoretical foundation. It serves as a basis for future empirical research, which may validate the proposed indicators and further develop the understanding of ESG implementation in Slovak municipalities.

Conclusion

This study examined the applicability of ESG principles in the context of Slovak local governments and identified several opportunities for strengthening sustainability-oriented governance at the municipal level. The qualitative synthesis of 37 sources showed that although many municipalities already pursue activities aligned with environmental protection, social well-being, and good governance, these efforts remain fragmented and are not reflected in a unified ESG reporting system. Digital transformation, transparent communication, and data accessibility emerged as key enablers for advancing ESG implementation in local government settings.

Based on the reviewed studies and considering the main drivers of sustainable development in local communities, we recommend applying the analytical framework, complemented by a set of potential ESG indicators. For the environmental dimension (E), suitable indicators include CO_2 emissions per capita, green areas per km^2, and waste separation rates, with data available from the Statistical Office of the Slovak Republic and the Ministry of the Environment. For the social dimension (S), indicators such as participatory budgeting, the number of cultural or community projects, and public events can be derived from municipal financial statements and local government open-data portals. For the governance dimension (G), indicators include the publication of budgets and strategic plans, the availability of open data, financial leverage, responsible financing practices, and independent ratings such as those from INEKO or Transparency International Slovakia.

The analysis further highlights the essential role of communication tools and digital platforms for effective municipal governance. Strengthening digital capacities and improving the quality and accessibility of municipal data would support transparency, enable evidence-based policymaking, and allow even smaller municipalities to participate in sustainability-oriented initiatives on an equal footing. The study calls for deeper research into data-driven, digitally supported ESG strategies in Slovak local governments and, based on the analysis of the resources, proposes implementing a sustainable development process to support the incorporation of ESG into every sphere of municipal governments' functioning.

This study has several limitations. It is conceptual in nature and draws exclusively on secondary sources, while the terminology and regulatory frameworks associated with ESG in the public sector continue to evolve. Nevertheless, it provides a structured foundation for developing ESG assessment tools tailored to Slovak municipalities. There is a vast area of future research. For instance, research should focus on empirical validation of the proposed indicators, including surveys, existing case studies of municipalities, and best practices, as well as continuing comparative analyses with other EU regions. A major challenge is developing a methodology for evaluating ESG dimensions. Testing the performance of sustainable development using the proposed enterprise phases would be beneficial for measuring progress toward SDG goals. Examining the financial mechanisms that enable sustainable development at the local level and linking them to ESG performance represents another promising direction for further research.

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AUTHOR INDEX

Last name, first name page #

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