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This review synthesizes innovation economics, environmental sustainability, higher education, and consumer behavior across multiple geographic contexts. The studies collectively reveal that institutional quality, contextual adaptation, and human-technology balance are critical determinants of economic and social outcomes in the contemporary global economy.

I. Innovation Ecosystems and Economic Productivity

Venture Capital as Strategic Productivity Instrument. Aistė Padgureckienė and Mindaugas Butkus (Lithuania) investigated venture capital's impact on labor productivity across OECD countries from 1990-2019. Their comprehensive analysis demonstrates that venture capital investment functions as more than mere financial capital—it serves as a strategic instrument for enhancing enterprise innovation and total factor productivity. However, the authors emphasize a crucial finding: effectiveness depends fundamentally on institutional environment quality rather than investment volume alone. The study identifies three critical policy prerequisites for VC-driven productivity gains: (1) tax incentives encouraging public-private cooperation, (2) streamlined legal frameworks for business formation and intellectual property protection, and (3) robust innovation ecosystems fostering academia-business-government collaboration. Notably, the authors acknowledge significant limitations, including the dataset's 2019 endpoint (excluding COVID-19 and post-pandemic effects) and insufficient assessment of business cycle impacts and economic shocks. For future research, the grouping countries by institutional characteristics, financial system orientation (bank-based versus capital market-based), and sector-specific venture capital allocation is proposed. This would enable identification of optimal conditions where venture capital investment generates maximum labor productivity impact, particularly relevant for EU policy formulation supporting innovation capacity in less-developed member states.

Digital Technologies and Innovation in Southeast Asia. Dung Nguyen Van et al. (Vietnam) examined ICT adoption's role in product innovation across five Southeast Asian countries (Cambodia, Indonesia, Philippines, Singapore, Vietnam), analyzing approximately 3,000 firms from World Bank Enterprise Survey data. Using multilevel mixed-effects logistic regression, they established that all three examined ICT dimensions significantly enhance product innovation: business websites/social media presence, electronic payment acceptance, and direct electronic export channels. A particularly important finding concerns R&D's moderating role. The study reveals that R&D investment positively amplifies the innovation effects of website/social media usage and electronic payments, increasing firms' absorptive capacity for technology integration. However, R&D does not moderate the relationship between electronic exporting and innovation—a finding suggesting different mechanisms operate in direct digital commerce versus customer-facing

digital platforms. The authors provide three critical managerial implications: First, managers should prioritize ICT adoption to gain market insights translating into innovative products. Second, R&D investment is essential for realizing ICT's full innovative potential. Third, digital literacy development through focused employee training programs enables effective technology integration into work processes. The study acknowledges using only three ICT proxies, noting that advanced manufacturing technologies, cloud computing, big data analytics, artificial intelligence, machine learning, and blockchain represent important unexplored dimensions that future research should address using more comprehensive surveys.

II. Environmental Sustainability and Green Transition

Green Innovation and Environmental Management Accounting. Komang Adi Kurniawan Saputra et al. (Indonesia) explored how environmental management accounting (EMA) mediates the relationship between green innovations and sustainability performance among SMEs in Bali. Their findings validate legitimacy theory in emerging economy contexts, demonstrating that both green product and green process innovations positively contribute to sustainability performance, with EMA playing a significant strengthening role in these relationships. The theoretical contribution lies in expanding legitimacy theory's application from large corporations to MSMEs (Micro, Small, and Medium Enterprises), showing how these entities use green innovations and environmental accounting to gain social and competitive legitimacy. The practical roadmap is clear: MSMEs should implement simple environmental cost accounting to assess green innovations' financial impact; governments should develop fiscal incentives and green grants for environmentally committed MSMEs; and national campaigns should increase consumer demand for green products. Saputra et al. emphasize that green practices are not operational burdens but strategic competitive advantages. They recommend future research integrate moderating variables such as government policies (tax incentives, environmental regulations), institutional support, and consumer environmental awareness to build more comprehensive models explaining why results vary across locations and industries.

Fiscal Decentralization and Carbon Emissions in the EU. Sabina Hodžić and Tanja Fatur Šikić (Croatia) conducted panel data analysis with method of moment quantile regression across EU countries (2004-2022), revealing asymmetric environmental effects of fiscal decentralization. Their findings challenge simplistic assumptions about decentralization's environmental benefits, showing starkly different outcomes between old and new EU member states. In new EU countries, expenditure decentralization correlates with higher CO_2 emissions, suggesting that local spending autonomy without strong environmental governance reinforces pollution-intensive development pathways. Revenue decentralization shows no consistent mitigation effect. Conversely, in old EU countries, fiscal decentralization demonstrates only modest, statistically weak relationships with emissions, reflecting

more mature institutional and regulatory frameworks. Across all models, GDP remains the primary emissions driver, while renewable energy consumption consistently reduces emissions. This leads authors to conclude that decentralization alone does not guarantee environmental gains—effectiveness depends critically on institutional context and alignment of local fiscal powers with environmental objectives. Their policy recommendations are specific: (1) local governments should establish special monitoring bureaus for environmental projects, (2) increase active local population participation in environmental innovations, (3) boost public and private renewable energy investment at local levels, and (4) align budgetary policies with CO_2 reduction targets. For new EU countries specifically, central governments should delegate powers to local authorities while implementing high institutional quality standards and environmental safeguards.

Green Growth Indicators Across the EU-27. Elvira Böcskei et al. (Hungary) analyzed economic growth-innovation-sustainability interactions using Eurostat data from 2015-2022. Their Pearson correlation and cluster analysis reveals that EU member states are beginning to decouple economic growth from greenhouse gas emissions, evidenced by declining GDP-GHG correlation (0.950 in 2015 to 0.945 in 2022). Critically, gross domestic expenditure on research and development (GERD) demonstrates negative correlation with emissions (-0.909 to -0.886), supporting the hypothesis that when GERD grows faster than GDP, the growth-emissions link weakens. The study validates Environmental Kuznets Curve (EKC) theory in the post-2015 EU context using granular data across 27 member states. Cluster analysis identified six heterogeneous country groups, ranging from Germany's high research-driven emission reductions to various EU states in sustainable energy transition stages. Böcskei et al. note that progress remains limited in certain countries, with some showing negligible GERD growth, necessitating policies facilitating green innovation while maintaining economic growth and investment. The practical implications center on balancing SDG 8 (decent work and economic growth), SDG 9 (industry and innovation), and SDG 13 (climate action) through targeted research incentives, renewable energy transitions for underperforming states, and cross-cluster knowledge sharing of best practices.

III. Higher Education and Intellectual Capital Development

Cross-Cultural Educational Preferences: Poland and Greece. Elżbieta Ociepa-Kicińska et al. (Poland, Greece) examined how national context shapes educational expectations, active learning experiences, and artificial intelligence perceptions among university students. Their comparative analysis reveals significant differences rooted in cultural factors and varying digital infrastructure development levels. Polish students, typically younger, preferred laboratories and group work, prioritizing lecturers' subject expertise, practical experience, and teaching diversity. Greek students favored project-based learning and seminars, emphasizing social competence development. Regarding artificial intelligence, both groups acknowledged educational potential, but Polish students more frequently highlighted risks

to independent thinking, while Greek students viewed AI as more inspirational. The study's theoretical contribution lies in applying Expectancy-Value Theory (EVT), digital pedagogy frameworks, and geography of education concepts to analyze educational preferences. Authors emphasize that lecturer human capital—knowledge, practical experience, and teaching methods—constitutes a crucial element in building knowledge resources supporting intellectual capital formation in higher education. Their recommendations stress curriculum adaptation to local cultural contexts and digital infrastructure levels, inclusion of critical technology reflection in study programs, and academic staff development policies emphasizing teaching and technological competencies. In the broader economic context, they note that universities play strategic roles in educating skilled workforces contributing to national innovation potential and long-term economic competitiveness.

Generation Z and Technological Engagement in Higher Education. Kristína Kozová et al. (Slovakia, Lithuania) investigated Generation Z students' expectations regarding AI/AR integration, study-life balance satisfaction, and academic program labor market relevance at A. Dubček University of Trenčín (554 respondents). Using chi-square tests and Cramer's V, they identified statistically significant relationships between demographic/academic variables and student attitudes. Key findings include: Faculty affiliation significantly shapes AI/AR attitudes, with technically oriented faculties showing markedly higher agreement levels, suggesting curricular content and disciplinary orientation strongly influence perceived technological relevance. Gender-based differences emerged in study-life balance satisfaction, with female students and those in applied/healthcare fields reporting higher contentment than those in political science or public administration. Regarding labor market alignment, students from economically stronger regions and vocational/healthcare programs reported higher confidence in education applicability, while social sciences students expressed greater uncertainty—highlighting potential mismatches between theoretical curricula and practical job requirements. Kozová et al. interpret findings through Self-Determination Theory (autonomy, competence, relatedness as internal motivation foundations) and the Technology Acceptance Model (perceived usefulness and ease of use determining adoption). Their recommendations include: (1) expanding AI/AR integration across all fields—not only technical programs—to enhance digital literacy, (2) supporting healthier study-life balance in high-stress disciplines, and (3) increasing experiential learning, internships, and industry collaboration to ensure employment preparedness.

IV. Digital Transformation Challenges

AI-Generated Marketing Content and Consumer Trust. Jana Majerova et al. (Czech Republic) examined AI-generated content's impact on perceived trust, authenticity, and credibility through survey research with 485 respondents (August-October 2025). Their findings reveal a significant challenge for marketing practice: AI-generated marketing content negatively affects perceived trust, authenticity, and credibility when recognized

by consumers. Crucially, the study found: (1) no statistically significant relationship between AI-powered marketing communication format and trust levels, (2) rational content demonstrates high trust/authenticity/credibility levels while emotional content receives low or very low ratings, and (3) no statistically significant relationship between consumer age and trust in AI communications. This creates what might be termed a "transparency paradox": ethical imperatives and prospective legislative requirements demand disclosure of AI usage, yet such disclosure damages perceived value. Majerova et al. propose building "AI-ready marketing architecture" that integrates algorithmic tools while maintaining the integral human dimension of communication, acknowledging that AI struggles fundamentally with emotional authenticity despite performing adequately with rational content. The implications for marketing management are profound, particularly given anticipated legislative obligations to publish AI usage information. The study suggests marketers must carefully consider which content types benefit from AI generation (rational, informational) versus which require human creation (emotional, relational) to maintain consumer trust.

Authenticity in Post-War Heritage Tourism. Sui Nghiep Phat et al. (Vietnam) advanced heritage tourism theory by validating the Attitude-Destination-Behavior (ADB) model in post-war heritage contexts (Binh Phuoc, Vietnam). Their study demonstrates that both object-based authenticity (historical accuracy) and existential authenticity (personal connection) influence behavioral intentions directly and indirectly, with destination attractiveness serving as a robust mediating mechanism. The incorporation of prior knowledge as a moderator refines understanding of how tourists interpret, evaluate, and internalize authenticity cues. Beyond empirical findings, Phat et al. reveal that authenticity in post-war heritage operates not merely as historical accuracy but as an emotional and social process enabling visitors to connect with collective memory, rediscover identity, and engage in reflective reconciliation with the past. This positions authenticity as a catalyst for emotional healing and cultural continuity—particularly meaningful for societies shaped by historical conflict. The practical implications for heritage site managers include designing interpretation strategies that simultaneously evoke emotional resonance and cognitive alignment, potentially incorporating emerging digital tools (virtual heritage, interactive storytelling, augmented interpretation) as pathways extending authenticity into hybrid physical-digital environments.

The Cultural Bridge Model for International Projects. Keisha LaRaine Ingram et al. (Ukraine, Lithuania) developed this Model through multidisciplinary qualitative research examining international cultural project management. Using Hofstede's cultural dimensions theory and Earley and Ang's cultural intelligence (CQ) model, they identified critical success factors in multicultural settings. Their findings demonstrate that projects actively integrating cultural intelligence from the outset—particularly through stakeholder training and inclusive planning processes—were significantly more likely to meet objectives and sustain long-term engagement. Success was defined not by budget size or geographic reach but by intercultural engagement quality and adaptive responsiveness to cultural complexity. Adaptive leadership characterized by cultural empathy, emotional intelligence,

and situational awareness proved critical for navigating uncertainty and fostering team cohesion. Leadership styles emphasizing decentralization, trust-building, and open feedback loops demonstrated highest effectiveness across diverse teams. While digital platforms (Zoom, Slack, Miro, Google Workspace) were indispensable, digital fluency alone was insufficient—teams embedding digital rituals (virtual check-ins, co-creation workshops, retrospectives) enhanced psychological safety, transparency, and collaborative learning. The practical toolkit developed includes pre-project cultural briefings and stakeholder mapping, inclusive decision-making structures for creative ideation and budget allocation, feedback mechanisms prioritizing community voices and local knowledge systems, leadership development modules grounded in intercultural empathy and systems thinking, and digital storytelling as reflective practice for ongoing learning. Theoretically, Ingram et al. extend cultural intelligence models into non-profit, artistic, and civic-engagement project domains—areas often excluded from mainstream management literature—highlighting equally critical emotional, creative, and ethical dimensions of cultural intelligence in global cultural initiatives.

Cross-Cutting Insights and Future Directions

Several overarching themes emerge from this diverse research collection:

1. *Institutional Quality Supersedes Investment Alone.* Whether examining venture capital (Padgureckienė & Butkus), fiscal decentralization (Hodžić & Fatur Šikić), or technology adoption (Nguyen Van et al.), institutional frameworks consistently determine effectiveness more than investment volumes.
2. *Context-Dependent Solutions.* The Poland-Greece educational comparison (Ociepa-Kicińska et al.), Southeast Asian ICT study (Nguyen Van et al.), and old versus new EU environmental analysis (Hodžić & Fatur Šikić) all demonstrate that solutions must adapt to local culture, infrastructure, and developmental stage.
3. *Human-Technology Balance.* From marketing (Majerova et al.) to education (Kozová et al.; Ociepa-Kicińska et al.) to project management (Ingram et al.), research consistently shows AI and digital tools enhance but cannot replace human judgment, creativity, and emotional intelligence.
4. *R&D as Universal Amplifier.* Research investment consistently moderates positive effects across ICT innovation (Nguyen Van et al.), green growth (Böcskei et al.), and productivity (Padgureckienė & Butkus).
5. *The Transparency-Trust Tension*. Majerova et al.'s findings on AI-generated content reveal a fundamental challenge: ethical disclosure requirements may damage perceived value, requiring careful navigation between transparency imperatives and effectiveness concerns.
6. *Shared Responsibility Models*. Multiple studies emphasize that complex contemporary challenges require central-local (Hodžić & Fatur Šikić), public-private

(Padgureckienė & Butkus), and academia-industry (Kozová et al.) collaboration rather than siloed approaches.

These findings collectively suggest that successful economic development, environmental sustainability, and social progress in the contemporary global economy depend less on technological or financial solutions alone and more on institutional quality, contextual adaptation, and balanced integration of human and technological capabilities. Future research should continue exploring these intersections across diverse geographic, cultural, and institutional contexts.

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