European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.18, No.6, 2026

Sustainable Tourism Management in Albania Integrating ESG practices in hotels and travel agencies through artificial intelligence

Enrik Sejdinaj[1], Loris Hoxha[2], Rakela Zefi Lazaj[3],
[1, 2, 3] Mediterranean University of Albania, Department of Management & Marketing,
Tirana, Albania
[*] Corresponding author: enrik.sejdinaj@umsh.edu.al

ABSTRACT
This study analyzes the transformation of the tourism sector in Albania through the integration of Environmental, Social, and Governance (ESG) practices, emphasizing the catalytic role of Artificial Intelligence (AI). As a rapidly growing tourist destination, Albania faces the imperative of balancing economic development with long-term sustainability. The findings of this study indicate that AI offers innovative solutions for energy optimization, food waste reduction, water resource management, personalization of the guest experience, enhanced communication, and overcoming language barriers, thereby fundamentally strengthening ESG pillars.
However, the adoption of these technologies in Albanian hotels and travel agencies remains uneven, influenced by barriers such as high initial costs, integration complexity, lack of technical expertise, and resistance to change in the workplace. This study provides a technological blueprint and strategic recommendations for implementing AI policies that promote more responsible, innovative, and competitive tourism in Albania, contributing to the literature on sustainable tourism in developing economies.
Keywords: Management, Sustainable *Tourism, ESG, Artificial Intelligence, Hospitality, Technology Adoption.*
DOI: 10.7176/EJBM/18-6-06
Publication date: June 30th 2026

1. INTRODUCTION

Over the past decade, Albania has transformed into a prominent European tourist destination, experiencing rapid growth in its tourism industry, which has become a cornerstone of the national economy. Forecasts suggest this upward trend will continue through 2026 (Kosta et al., 2025). Travelers are attracted to Albania not only for its pleasant Mediterranean climate but also for its diverse natural landscapes, where untouched beaches meet dramatic mountain ranges, enriched by the renowned warmth and hospitality of its people.
However, this success presents pressing questions regarding the sustainability of Albania's infrastructure, communities, and environment. The tourism boom has already placed significant strain on local resources, with roads, waste management systems, and public services struggling to keep pace, and fragile ecosystems facing mounting pressure. Without careful planning, the very qualities that make Albania attractive could be undermined. To secure long-term competitiveness, hotels, tour operators, and policymakers must embrace environmental, social, and governance (ESG) practices that align with international standards (Zhilla, 2025; Sejdinaj et al., 2025).
Artificial Intelligence (AI) offers a promising pathway to achieve this balance. From optimizing resource use and reducing waste to improving transparency in corporate governance, AI is reshaping how tourism businesses operate and report on sustainability (Tavanxhiu et al., 2026). Its potential lies not only in efficiency but also in fostering trust among increasingly conscious travelers who expect responsible tourism.
This study investigates the intersection of AI and ESG in Albania's tourism sector. It provides an in-depth analysis of how AI can act as a catalyst for sustainability and competitiveness, while also offering a framework for integrating AI-driven ESG practices in developing economies. By highlighting the role of technology in promoting innovation and responsible management, the study contributes to both academic literature and practical strategies for strengthening Albania's tourism ecosystem.

2. THEORETICAL FRAMEWORK

2.1. Sustainable Tourism and ESG Practices

Sustainable tourism has gradually expanded from its early focus on environmental protection to a broader, more holistic approach that embraces economic, social, and governance (ESG) dimensions (Camilleri, 2026). This shift reflects the growing recognition that tourism cannot thrive in isolation from the communities, cultures, and ecosystems it touches.

ESG practices in tourism now encompass a wide spectrum: responsible resource management, pollution reduction, community support, cultural preservation, fair working conditions, transparency, and ethical business conduct (Rahman, 2025). These practices are increasingly seen as essential not only for meeting global sustainability goals but also for attracting a new generation of travelers who value authenticity and responsibility (Lu, 2025). In this sense, destinations that embed ESG principles into their strategies are better positioned to ensure resilience, long-term growth, and competitiveness in a rapidly changing market.

2.2. The Role of Artificial Intelligence in Sustainable Tourism

Artificial Intelligence (AI) is reshaping the tourism industry by offering practical tools to address sustainability challenges (Alves et al., 2025; Siddik, et al., 2025). From optimizing hotel operations to reducing waste and managing tourist flows, AI enables businesses to balance efficiency with environmental stewardship.

Concrete examples illustrate this potential: hotels use predictive systems to forecast food demand and minimize waste (Accor, 2023), while transport providers employ AI-driven route optimization to cut carbon emissions. Yet, alongside these benefits, AI adoption raises important ethical questions. Concerns about data privacy, algorithmic bias, and the impact on employment highlight the need for careful governance (Cristian, et al., 2024). Thus, AI in tourism is both an opportunity and a challenge, its success depends on how responsibly it is integrated into ESG strategies.

2.3. Technology Adoption Models (TAM, TOE, DOI)

To understand how AI can be adopted in tourism, particularly in support of ESG practices, this study draws on three complementary frameworks:

- Technology Acceptance Model (TAM): This model emphasizes perceived ease of use and perceived usefulness as the main drivers of technology adoption (Onder, 2026). In tourism, this means that hotels and agencies are more likely to embrace AI if they find it simple to implement and clearly beneficial for sustainability goals.
- Technology-Organization-Environment (TOE) Framework: This framework situates adoption within three contexts, technological, organizational, and environmental (Yoopetch, et al., 2024). This framework highlights how internal resources, organizational culture, and external pressures such as regulations or competition collectively shape decisions about AI integration.
- Diffusion of Innovation (DOI) Theory: This theory explains how innovations spread through social systems, focusing on attributes like relative advantage, compatibility, complexity, trialability, and observability (Mondol et al., 2026). In the Albanian tourism sector, DOI helps to capture not only whether AI will be adopted but also how quickly and widely it will diffuse across different enterprises.

2.4. Integrative Perspective

Taken together, TAM, TOE, and DOI provide a layered and complementary understanding of how AI adoption unfolds in tourism. Each framework sheds light on a different dimension of the process: TAM captures the role of individual perceptions and behavioral intentions, TOE highlights the organizational and environmental conditions that shape adoption, and DOI explains how innovations spread across a wider social system.

This integrated framework is particularly valuable for Albanian tourism enterprises, as it highlights that AI adoption for ESG practices is a multi-level process requiring alignment between individual attitudes, organizational readiness, and industry-wide diffusion. By viewing adoption through these three lenses simultaneously, this study can better explain both the opportunities and the barriers that shape how AI contributes to sustainable tourism. Ultimately, the integration of TAM, TOE, and DOI underscores the

importance of balancing innovation with responsibility, ensuring that technological progress supports, not undermines, the long-term goals of sustainability, community well-being, and ethical governance.

3. RESEARCH METHODOLOGY

This study adopts a mixed-methods research design, combining quantitative analysis of secondary data with qualitative insights from case studies and academic literature. The goal is to provide a comprehensive overview of how ESG practices are being adopted in the Albanian tourism sector and to explore the role of Artificial Intelligence (AI) in shaping this process. By blending numerical evidence with contextual interpretation, the study ensures both breadth and depth in its findings.

The research design is exploratory and descriptive, reflecting the need to map out a relatively new and evolving field. Data were drawn from multiple sources to ensure validity and triangulation.

To assess the readiness and adoption of AI by hotels and travel agencies in Albania, the study employs an analytical framework built on the Technology Acceptance Model (TAM), the Technology-Organization-Environment (TOE) framework, and Diffusion of Innovation (DOI) theory. Together, these models help identify the individual, organizational, and systemic factors influencing AI integration into ESG practices.

A segmentation analysis of accommodation providers, categorized as Tech Leaders, Selective Adopters, and Skeptics—was adapted from Tavanxhiu et al. (2026). This typology provides a nuanced view of digital maturity within the sector, highlighting differences in readiness and strategic orientation.

Quantitative data were analyzed to identify adoption trends and compare readiness levels across different provider segments. To enhance clarity and accessibility, results were visualized using bar and pie charts. These visualizations illustrate:

- The segmentation of accommodation providers by AI readiness.
- The estimated impact of AI on specific ESG pillars, based on an expert-derived impact index and literature review.

By combining statistical analysis with clear visual representation, the study ensures that findings are both rigorous and easy to interpret.

Methodological Contribution

This methodology provides a structured yet flexible approach to understanding AI adoption in sustainable tourism. It balances empirical evidence with theoretical grounding, offering insights that are academically robust and practically relevant. In doing so, it lays the foundation for identifying opportunities, challenges, and pathways for Albanian tourism enterprises to align technological innovation with ESG principles.

4. ANALYSIS OF ESG PRACTICES IN ALBANIAN TOURISM

Albania has taken significant steps towards sustainable tourism, joining the Global Sustainable Tourism Council (GSTC) in December 2024. This has encouraged hotels and travel agencies to adopt higher standards of non-financial reporting (Zhilla, 2025).

Environmental

For hotels in Albania, the environmental focus is on energy efficiency and waste management. Recent studies have shown that 86% of sustainability practices in the accommodation sector are related to eco-innovation. Hotels are investing in solar panels, water recycling systems, and other green technologies to reduce their ecological footprints.

Social

The social pillar includes supporting local communities, promoting Albanian culture, and ensuring fair working conditions for employees. Travel agencies play a key role by integrating local products into their packages and promoting rural destinations to distribute tourist flows beyond overcrowded coastal areas, fostering sustainable social development (SDGs Review, 2025).

Governance

Good governance in tourism means transparency in decision-making, guest data protection, and fighting informality. The entry of 17 global hotel chains into Albania (such as Marriott, Hyatt, and Accor) is bringing high governance standards that serve as models for local businesses (Tavanxhiu et al., 2026).

5. RESULTS

AI is not only a tool for operational efficiency but also a catalyst for sustainability. The charts below illustrate the sector's readiness and AI's impact of AI on ESG pillars.

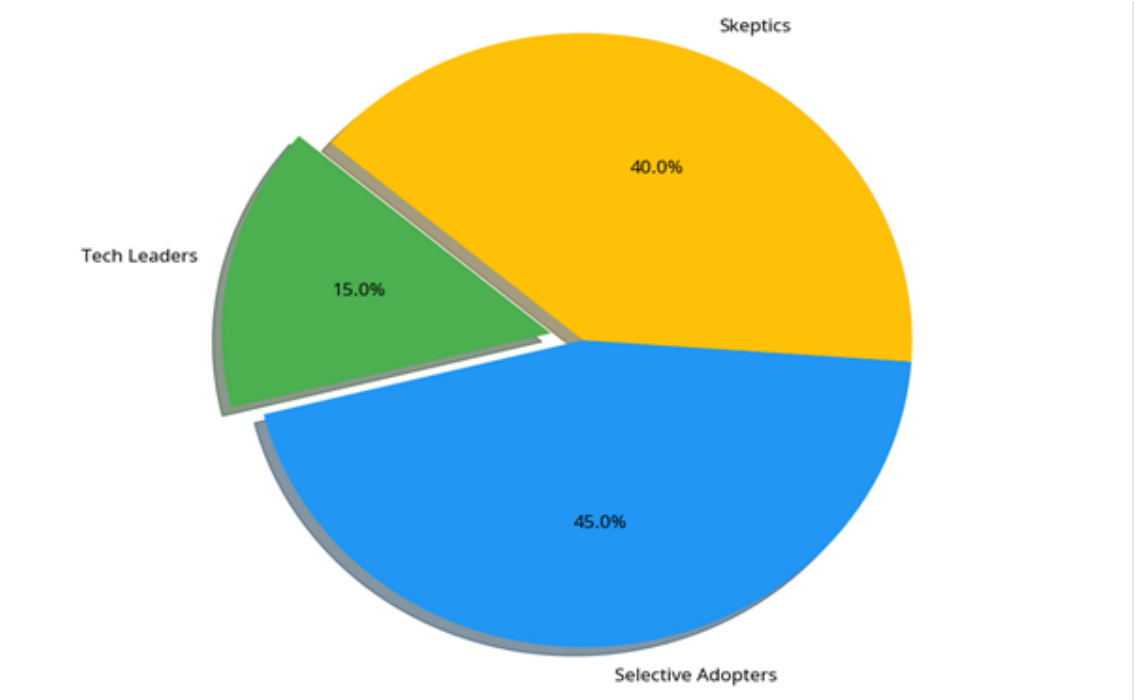

Figure 1. Accommodation provider segmentation by AI readiness in Albania (2026)

Figure 1 demonstrates a highly asymmetric distribution of artificial intelligence (AI) readiness among accommodation providers in Albania, with 45% classified as selective adopters, 40% as skeptics, and only 15% as technology leaders. This configuration reflects a structurally uneven adoption pattern, indicative of a fragmented digital transformation process within the sector.

AI for Environmental: Resource Optimization

Real-time energy consumption monitoring and guest presence-based lighting and HVAC (heating, ventilation, and air conditioning) system adjustments are both possible with AI-based systems. Additionally, hotels using technology like Winnow can reduce food waste by up to 30% by using AI to forecast food demand (Accor, 2023). These applications improve environmental efficiency and support industry sustainability goals.

AI for Social: Visitor Experience and Inclusivity

AI-powered chatbots and virtual assistants (like ADA38 in North Macedonia or new assistants in Albania) increase accessibility for foreign visitors by offering round-the-clock assistance in multiple languages. Businesses can better understand customer needs and make targeted service improvements by using sentiment analysis of online reviews (Kosta et al., 2025). Better customer service and social inclusion for senior citizens are two benefits of this.

AI for Governance: Transparency and Security

AI-based platforms make ESG performance reporting easier by gathering and evaluating data from multiple sources to produce clear reports for regulators and investors. Furthermore, the EU AI Act, which is also being harmonized in Albania, requires that AI play a crucial role in cybersecurity by safeguarding sensitive visitor data (Tavanxhiu et al., 2026).

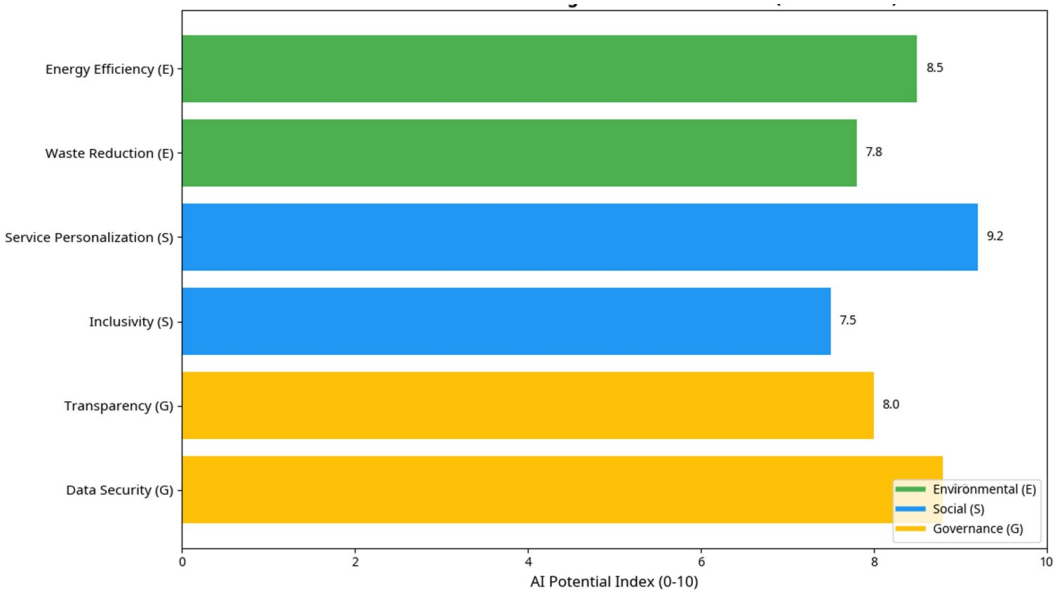

Figure 2. AI potential in transforming ESG pillars in tourism (Albania 2026)

Figure 2 presents a comparative assessment of AI's potential impact across the Environmental, Social, and Governance (ESG) dimensions, with all indicators scoring within a relatively high range (7.5–9.2). This distribution reflects a broad recognition of AI as a multidimensional enabler of sustainability within the tourism sector.

Within the social dimension, service personalization achieves the highest score (9.2), indicating that AI is perceived to exert its most significant influence on customer experience. This finding suggests a strategic shift toward data-driven, customer-centric service models, where value creation is increasingly derived from the ability to tailor offerings to individual preferences. Inclusivity, with a score of 7.5, while still significant, appears comparatively less emphasized, indicating that accessibility-related applications of AI are recognized but not prioritized to the same extent.

In the governance dimension, data security (8.8) emerges as a critical area of impact, reflecting the growing importance of safeguarding customer information and ensuring compliance with regulatory frameworks in a digitalized environment. Transparency (8.0), although slightly lower, remains a key component, indicating that AI is also valued for its capacity to enhance accountability and reporting processes.

Regarding the environmental dimension, energy efficiency (8.5) demonstrates a strong perceived potential, suggesting that AI applications in resource optimization are considered both effective and strategically relevant. Waste reduction (7.8), while important, is comparatively less prominent, implying that its impact is perceived as more operational than transformative.

The relatively narrow dispersion of scores across all indicators suggests that AI's contribution to ESG is not concentrated within a single dimension but is instead distributed across multiple domains. However, the ranking of the indicators indicates a clear prioritization hierarchy, with greater emphasis placed on customer-oriented innovation and data governance, followed by environmental optimization.

Overall, Figure 2 indicates that the future role of AI in the Albanian tourism sector is expected to be both integrative and strategic, with its highest value derived from enhancing service personalization and ensuring secure and reliable data management, while also contributing to environmental sustainability objectives.

6. DISCUSSION

The results of this study highlight the complex dynamics of adopting AI for ESG practices in the Albanian tourism sector. While the potential of AI to foster sustainability is clear, as evidenced by the high-impact indices in service personalization and energy efficiency, the current rate of adoption remains modest. The segmentation of accommodation providers shows that a large proportion of businesses are still in the early stages of digitalization, being either "Selective Adopters" or "Skeptics" (Tavanxhiu et al., 2026).

This aligns with the literature on developing economies, where barriers such as high costs, skill shortages, and inadequate infrastructure hinder the diffusion of technological innovations (Cristian, et al., 2024).

From the perspective of the TAM-TOE-DOI framework, the perceived usefulness of AI for ESG is high, but the perceived ease of use and organizational and environmental factors pose challenges. The lack of financial resources and technical expertise within organizations, as well as an unclear regulatory framework, may explain the resistance to change. Furthermore, consumer trust in new technologies, particularly concerning data privacy, is a critical factor that must be addressed to ensure the widespread acceptance of AI-driven tourism services (Tavanxhiu et al., 2026).

This study contributes to the existing literature by providing a specific analysis of Albania, a developing economy with a dynamic tourism sector. It emphasizes the need for differentiated policies that support various segments of providers, ranging from strengthening basic digital capabilities for "Skeptics" to fostering innovation for "Tech Leaders." Moreover, it highlights the importance of a holistic approach that addresses not only technological aspects but also organizational and environmental aspects, as suggested by the TOE framework.

7. CHALLENGES AND LIMITATIONS OF THE STUDY

Despite its potential, the integration of AI for ESG in Albania encounters several significant obstacles. The high implementation costs of smart technologies remain prohibitive for many small and medium-sized enterprises, restricting their access to advanced AI solutions. In addition, there is a pronounced shortage of qualified personnel capable of managing and developing AI systems or interpreting data for ESG-related decision-making. The country's digital infrastructure also presents challenges, particularly the need for reliable high-speed Internet connectivity and interoperable systems across the nation, with rural areas being most affected. Furthermore, resistance to change persists, driven by fears that AI may replace traditional human hospitality and by limited awareness of the long-term sustainability benefits that AI can provide.

This study is not without limitations. It relies primarily on secondary data and existing literature, which constrains the depth of analysis specific to Albania. Moreover, the segmentation of accommodation providers is based on general assessments rather than comprehensive survey data. Future research could address these gaps by collecting primary data and conducting comparative studies with other Western Balkan countries, thereby offering a broader and more nuanced perspective.

8. CONCLUSIONS AND RECOMMENDATIONS

Integrating AI into ESG practices represents the future of sustainable tourism in Albania. To accelerate this process and overcome the identified challenges, the following steps are recommended:

- For the Government: Create specific grants for "Green and Digital Tourism" that support SMEs in adopting ESG technologies. Develop a National Intelligent Tourism Platform and harmonize the regulatory framework with the EU AI Act.
- For Hotels and Travel Agencies: Start with small steps, such as installing smart energy sensors and using AI for customer feedback analysis. Invest in staff training for digital skills and raise awareness of the long-term benefits of AI for sustainability.
- For Tourism Associations: Promote the successes of "Tech Leader" hotels as models to follow and create networks for sharing experiences and best practices.

Albania has the potential to become a regional leader in smart and sustainable tourism, using AI not only for economic growth but also for the protection of its natural and cultural heritages. Through a strategic and collaborative approach, a balance between tourism development and environmental and social sustainability can be achieved in the region.

REFERENCES

1) Accor. (2023). Food waste: AI supporting Accor hotels. https://press.accor.com/food-waste-ai-supporting-accor-hotels
2) Onder, I. (2026)Technology Adoption Model. Theories and Models in Tourism and Hospitality Research, pp. 413-417. https://doi.org/10.1079/9781800625822.006

3) Camilleri, M.2026. "Environmental, Social and Governance (ESG) Factors for Sustainable Tourism Development: The Way Forward Toward Destination Resilience and Growth." Business Strategy and the Environment35, no. 3: 4057-4082. https://doi.org/10.1002/bse.70366 .
4) Kosta, A., Pazari, F., Lili, I., & Greca, S. (2025). The role of artificial intelligence in transforming tourism services: The case of Durrës, Albania. Geojournal of Tourism and Geosites, 61(3), 1485-1494. https://doi.org/10.30892/gtg.61308-1518
5) Mondol, M. N., Takee, M. I., Ahad, A., Joardar, M. S. A., & Hossain, M. S. (2026). Smart Tourism Technologies in the Industry 4.0 Era: A PRISMA-Based Systematic Review of Adoption, Implications, Outcome and Future Direction. Journal of Computer Science and Information Technology, 3(1), 43–69. https://doi.org/10.61424/jcsit.v3i1.711
6) Cristian, M. G., & Tileagă, C. (2024). Challenges and Perspectives of Ai in Sustainable Tourism. Management of Sustainable Development, 16(2), 14-26. https://doi.org/10.54989/msd-2024-0012
7) Alves, J., Arantes, L., & Moreira, A. C. (2025). AI-powered sustainable tourism: Aligning innovations with the sustainable development goals. Tourism and Hospitality Research, 0(0) https://doi.org/10.1177/14673584251409416.
8) Rahman, M., Islam, F., Hossain, E., Rehman, M. Z., & Siddik, A. B. (2025). Environmental, social, and governance-driven sustainable tourism management in small and medium enterprises. International Journal of Sustainable Development & World Ecology, 32(8), 988-1008. https://doi.org/10.1080/13504509.2025.2576023
9) Siddik, A. B., Forid, S., Li, Y., Du, A. M., & Goodell, J. W. (2025). Artificial intelligence as a catalyst for sustainable tourism growth and economic cycles. Technological Forecasting and Social Change, Volume 210, https://www.sciencedirect.com/science/article/pii/S0040162524006735
10) Lu, B. (2025). Sustainable Tourism Management: Balancing Economic Growth and Environmental Preservation. Journal of Lifestyle and SDGs Review, 5(5), e06587. https://doi.org/10.47172/2965-730X.SDGsReview.v5.n05.pe06587
11) Sejdinaj, E., Hoxha, L., & Kanushi, B. (2025). The Role of Technology and Sustainability in Promoting Innovation for the Management of the Tourism Business Ecosystem in Albania. International Journal of Ecosystems and Ecology Science (IJEES), 15(5), 249-258. https://doi.org/10.31407/ijees15.530
12) Tavanxhiu, T., Godolja, M., Sevrani, K., & Naco, M. (2026). A Technological Blueprint for Smart and AI-Driven Hospitality in Emerging Tourism Markets: Evidence from Albania. Systems, 14(2), 188. https://doi.org/10.3390/systems14020188
13) Yoopetch, C., Chareanporn, T. (2024). Measuring hotel financial and non-financial performance in Thailand: The application of technology-organization-environment (TOE) framework. Journal of Ecohumanism, 6, 1703-1718. https://www.ceeol.com/search/article-detail?id=1274959
14) Zhilla, A. (2025). The Role of Big Data in Promoting Sustainable Tourism Practices in Albania: Proposal for a National Intelligent Tourism Platform. Acta Universitatis Bohemiae Meridionalis. http://acta.ef.jcu.cz/pdfs/aub/2025/02/04.pdf