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Innovation Management and Economic Performance in the Tourism Sector: Evidence from Transitional Challenges in Ukraine

Volodymyr KHUDO
https://orcid.org/0009-0000-3971-7373
Department of Tourism, Faculty of Geography
Ivan Franko National University of Lviv, Ukraine
volodymyr.khudo@lnu.edu.ua

Kyrylo HIBKIN
https://orcid.org/0000-0002-5913-7293
Department of Public Management and Administration, Faculty of Economics, Management and Psychology, State University of Trade and Economics, Kyiv, Ukraine
gibkin18@gmail.com

Valentyna DEMKO
https://orcid.org/0000-0001-6456-8795
Department of Economics and Business
Dmytro Motornyi Tavria State Agrotechnological University, Zaporizhia, Ukraine
valjademko88@gmail.com

Anhelina SAHALOVYCH
https://orcid.org/0000-0001-6165-2801
Department of Audiovisual Arts & Media Technology, Methodology of Cross-Cultural Practices
Kharkiv State Academy of Design and Fine Arts, Kharkiv, Ukraine
angelina7756@gmail.com

Yuliia PEREGUDA
https://orcid.org/0000-0002-1434-2509
Department of Tourism Organization, PJSC Interregional Academy of Personnel Management
Department of Global Economy
National University of Bioresources and Nature Management of Ukraine, Kyiv, Ukraine
julilla.pereguda@gmail.com

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Abstract

This study examines the impact of innovation management on the economic development and resilience of the tourism business in Ukraine. In the face of unprecedented geopolitical risks and the aftermath of global health crises, innovation has transformed from a competitive advantage into a fundamental survival mechanism for service enterprises. Utilizing a structural-analytical framework, the research evaluates how the adoption of digital service models, safety-oriented product innovations, and adaptive marketing strategies influences firm performance and market stability.

The findings demonstrate that effective innovation management significantly mitigates the negative economic impacts of external shocks by optimizing resource allocation and enhancing consumer confidence. The study concludes that for tourism businesses in transitional and high-risk environments, the integration of technological and managerial innovations is essential for ensuring long-term financial sustainability and contributing to regional economic recovery.

Keywords: innovation management; tourism business; economic resilience; digital transformation; service economy; crisis management.

JEL Classification: Z32; O32; L83; D22; O14.

Introduction

Ukraine's tourism sector entered the 2020s already weakened by the COVID-19 shock and was then hit again by the full-scale invasion of February, 2022. The war has had extensive physical effects on culture and tourism infrastructure, and significant revenue losses. UNESCO estimates physical damage to culture and tourism at about 3.5 billion, of which the wider recovery requirements are in the billions. This devastation and income loss changed the initial terms under which any study of the development of tourism in Ukraine will take place; recovery, reconstruction and resilience are the main topics (UNESCO, 2023). Those losses and the security context did not stop the official and industry data released in 2023-2024, which indicates high resilience and partial recoveries in the arrivals and tourist activity, a pattern reflected in the international tourism reports that place international tourism at or above pre-pandemic levels by 2024.

That wider recovery brings opportunities and pressures to Ukraine: in certain areas, demand is coming back, but the industry will have to reconstruct infrastructure, revive heritage sites and deal with safety-related attitudes as it competes to attract international visitors. (UNWTO, 2023). It is on this basis that innovation management, the intentional introduction, alignment and amplification of new technologies, business models, and institutional practices, is becoming one of the key catalysts of tourism development in Ukraine. Recent literature outlines various directions of innovation applicable to the Ukrainian situation: digitalization of booking and information systems, so-called smart tourism technologies (digital storytelling, virtual/augmented reality of damaged or unsafe sites, AI-based marketing), remote-service models and platform partnerships which assist in keeping the business visible internationally and functioning. Planning of post-war tourism already includes public-private projects and activities in cooperation with international travel websites (e.g., the Ukrainian tourism agency has already collaborated with Airbnb and Expedia to prepare post-war deals and routes). These innovations are able to (a) allow lower costs of transactions and information among the visiting people; (b) open new sources of revenue (virtual tourism, heritage reconstructions); (c) enhance destination marketing; and (d) enable recovery of SATD, which is community-based and distributed regionally (SATD, 2022).

Innovation management in tourism can be conceptualized as a positive shift in the service production function, whereby a given combination of inputs, labour, capital, infrastructure, and natural or cultural assets produces a higher quantity or quality of tourism services. Within this framework, digital and organizational innovations function as productivity-enhancing factors, enabling firms to increase output or service quality without proportional increases in conventional inputs. Digital technologies such as artificial intelligence (AI), virtual reality (VR), and digital booking platforms reshape the cost structure of tourism enterprises through two primary channels: reductions in operational costs and transaction costs.

Operational cost reductions arise from automation of routine activities, improved demand forecasting, optimized pricing, and more efficient resource allocation. AI-based marketing tools enhance customer segmentation and targeting efficiency, while digital reservation systems reduce labour intensity, administrative errors, and idle capacity. VR applications allow destinations to market experiences at relatively low marginal cost, substituting digital promotion for expensive physical infrastructure investments. Similarly, digital tools significantly reduce transaction costs associated with information search, coordination, contracting, and trust-building. Online platforms lower information asymmetries between tourists and service providers, facilitate reputation mechanisms, and streamline payment and booking processes. From an economic perspective, effective innovation management thus enhances allocative efficiency by improving the matching of tourist preferences with service offerings, and dynamic efficiency, by enabling rapid adaptation to changes in demand and external shocks.

Despite its theoretical potential, the impact of innovation management in Ukraine's tourism sector is highly conditional. Any empirical analysis must explicitly account for several binding constraints, including extensive war-related infrastructure damage, substantial financing gaps for reconstruction and innovation investment, uneven digital readiness across regions and firm sizes, and persistent security risks that limit mobility and capital inflows. These conditions imply that innovation management in Ukraine is not merely a technological issue, but also a governance, financing, and capacity-building challenge.

As emphasized by Kulyk & Danylyshyn (2023), the effectiveness of innovation depends heavily on complementary policy and managerial innovations, such as the mobilization of frozen assets or donor funding for restoration, targeted innovation grants, workforce training programs, and regulatory facilitation of partnerships with digital platforms. Without these enabling mechanisms, technological adoption alone is unlikely to generate sustained productivity gains. The relevance of innovation management is further reinforced by structural shifts in global tourism demand. The rapid diffusion of digital technologies in the post-pandemic period has reshaped visitor expectations, with tourists increasingly demanding high-quality digital services, personalized experiences, and environmentally sustainable tourism products (Nicola-Gavrilă, 2023). Consequently, the innovative transformation of Ukraine's tourism sector depends on the integration of digital marketing tools, sustainable tourism practices, enhanced service quality, and modernized infrastructure (IDRGT, 2024).

Nevertheless, Ukraine's tourism industry continues to struggle to keep pace with these global trends, largely due to the absence of a coherent national innovation strategy. Weak infrastructure, limited international visibility, and low responsiveness to evolving consumer preferences constrain the sector's growth potential and global competitiveness (Domyshche-Medyanyk et al., 2025). In this context, innovation management represents a critical mechanism through which tourism enterprises can leverage emerging niches such as eco-tourism, experiential tourism, and digitally mediated services.

The application of innovation management across Ukraine remains highly uneven. While relatively safer western regions, including Lviv, Zakarpattia, and the Carpathian area, continue to attract domestic and limited international tourists, many traditionally tourism-dependent regions have been severely affected by warfare, infrastructure destruction, and declining international demand since 2022. Small and medium-sized enterprises (SMEs), which constitute the core of Ukraine's tourism sector, face acute financial constraints, limited access to digital technologies, and insufficient managerial expertise in innovation practices. As a result, the adoption of digital booking systems, virtual tours, AI-based marketing tools, and smart-destination technologies is concentrated in a small number of urban and western destinations, while rural areas and conflict-affected regions remain largely excluded (Yakubovskiy & Kyrychenko, 2024; Kulyk & Danylyshyn, 2023). The lack of a coordinated national innovation policy further restricts knowledge sharing, resource pooling, and strategic investment. According to the State Agency for Tourism Development of Ukraine (SATD, 2022) and UNESCO (2023), the absence of a comprehensive innovation-oriented tourism strategy risks widening regional disparities during post-war recovery and undermining Ukraine's competitiveness relative to neighbouring Eastern European countries that are rapidly advancing in digital and sustainable tourism Yermachenko et. al., 2023).

Taken together, these factors suggest that innovation management in Ukraine's tourism sector should be modelled not as an exogenous technological shock, but as a context-dependent productivity shift, mediated by institutional quality, financing mechanisms, human capital, and security conditions. For tourism enterprises operating in a structurally constrained and highly competitive global environment, innovation management remains a critical driver of growth, efficiency, and strategic agility (Roman et al., 2024). However, its effects vary substantially across regions and sub-sectors, requiring continuous adaptation and context-specific strategies (Oklander et al., 2017).

From an economic perspective, the shock to international mobility induced by the pandemic and the ongoing war in Ukraine generated a substitution effect in tourism demand, whereby consumers substituted international travel with domestic tourism due to relative changes in prices, risks, and access constraints. As international travel became more costly or infeasible because of security concerns, border restrictions, and uncertainty, domestic destinations emerged as imperfect but increasingly attractive substitutes. This shift reflects a standard consumer choice response to constrained opportunity sets, rather than a contraction of tourism demand per se.

Innovation management played an important role in facilitating this substitution effect by reducing the perceived and actual quality gap between international and domestic tourism offerings. Through digital marketing, AI-based targeting of domestic travellers, online booking platforms, and virtual promotion tools, tourism enterprises were able to reorient demand toward local destinations more efficiently and at lower transaction costs. Innovations in product design, such as experiential tourism, eco-tourism, and customized travel packages, further enhanced the utility of domestic tourism relative to foreign alternatives. Consequently, innovation management acted as an adjustment mechanism, enabling tourism firms to reallocate capacity toward domestic markets and partially stabilize revenues under conditions of external shocks. This reinforces the interpretation of innovation not only as a productivity-enhancing factor, but also as a demand-reallocation tool that increases sectoral resilience under structural constraints.

This gap in both innovation adoption and policy coordination provides the foundation for the central research question: How can the integration of digital technologies, sustainability practices, and innovative business models enhance the recovery and long-term competitiveness of Ukraine's tourism industry, particularly in war-affected regions and SMEs? On the empirical level, there is a mainstream literature that suggests the transformational impact of digital technologies. As described by El Archi et al. (2023), booking systems and mobile apps introduce efficiency, communication, and convenience to customers, thus accelerating the process of innovation adoption at the tourism value chain. Shpak et al. (2025) and Li et al. (2018) exemplify that big data analytics can assist firms in personalizing their services, improving customer engagement, and increasing revenues. Zeng & Gerritsen (2014) demonstrate that social media marketing can make a destination more visible and globally competitive. Such works confirm that digital innovation has become not just an exception but a main component of the competitiveness of the tourism industry (Vovchak & Rudevska, 2016).

Additionally, while the transformational potential of digital and experiential innovations is widely recognized, a gap remains in the integration of sustainability with these innovations. Fletcher et al. (2019) affirm that green hotels, green transport, and green tourism activities not only attract environmentally conscious visitors but also help businesses align with global sustainability standards. Ku (2025) and Chukhray et al. (2025) highlight responsible and community-based tourism as a way to incorporate long-term economic benefits and local well-being. Despite this, few studies directly examine the intersection of sustainability with digital and experiential innovations in the context of Ukraine's tourism, leading to a knowledge gap in creating a holistic framework for recovery (Sabadash et al., 2020).

While recent studies have increasingly focused on digital transformation in crisis-afflicted destinations, such as the impact of COVID-19 and the war in Ukraine, the literature remains fragmented. The lack of empirical testing, fragmented methodological approaches, and the absence of a cohesive theoretical framework hinder the ability to generalize findings and offer actionable insights. Ukraine, as a unique case of crisis and recovery, necessitates a more rigorous, comparative approach that integrates digital technologies, sustainability practices, and innovative business models to guide both immediate recovery and long-term competitiveness in the tourism sector. This study aims to fill that gap by developing an integrative framework that can help inform post-war reconstruction and the future trajectory of Ukraine's tourism industry (Troian et al. (2023).

After the introduction, this paper is organized in the following way: Section 1. The empirical methodology is offered. Section 2 is the results section in which the results are discussed. Sections 3 and 4 present the discussion and conclusion of the study, respectively.

1. Research Methodology

This study employs a mixed-methods research design to examine the impact of innovation management on tourism development in Ukraine. By integrating quantitative and qualitative approaches, the research captures both measurable relationships and context-specific dynamics, providing a comprehensive understanding of how innovation contributes to sectoral resilience and performance in a transitional and crisis-affected economy.

1.1. Research Design

The research adopts a concurrent mixed-methods design, in which quantitative and qualitative data are collected simultaneously, analysed independently, and integrated at the interpretation stage. This approach is particularly appropriate given the study's dual objective:

(i) to identify statistical relationships between innovation management and tourism performance, and (ii) to explore the underlying mechanisms, managerial perspectives, and contextual constraints shaping innovation adoption.

The quantitative component is based on a structured survey, enabling the identification of general patterns and relationships across tourism enterprises. The qualitative component relies on semi-structured interviews, providing deeper insights into strategic behaviour, institutional constraints, and innovation practices. The integration of both strands enhances analytical robustness and ensures a more nuanced interpretation of the findings.

1.2. Data Collection Methods

Survey Data

Quantitative data were collected survey instrument designed to capture perceptions, practices, and outcomes related to innovation management in Ukraine's tourism sector. The questionnaire included closed-ended and Likert-scale items, allowing for the measurement of key constructs such as digital adoption, organizational readiness, sustainability practices, and perceived business performance.

The survey targeted 120 professionals across the tourism ecosystem, including tour operators, hospitality providers, and transport service firms. A purposive sampling strategy was applied to ensure that respondents possessed relevant managerial or operational experience and were directly involved in innovation-related activities. This approach enhanced the validity and relevance of the collected data.

The combination of 120 survey respondents**,** 15 interviewees**,** and 5 case studies was carefully selected to provide both breadth and depth in addressing the research questions. While the sample sizes are not intended to be fully representative in a statistical sense, they were sufficient to capture the key trends, perspectives, and contextual factors that are central to understanding innovation management in Ukraine's tourism industry. The integration of both quantitative and qualitative methods, along with careful attention to representativeness and bias control, ensures that the findings will offer valuable insights into the role of innovation in the tourism industry's recovery and long-term competitiveness in Ukraine.

Qualitative Interviews

Besides the survey aspect, semi-structured interviews were carried out with practitioners, managers, and service providers with direct experience in innovation efforts in the Ukrainian tourism sector. The use of semi-structured interviews allowed for both consistency across respondents and flexibility to probe deeper into context-specific issues. An interview guide was developed with open-ended questions to facilitate in-depth exploration of four key themes:

(i) Innovation strategy – whether organizations with a clearly defined innovation strategy demonstrate superior performance and long-term sustainability in the development of tourism businesses.

(ii) Policy environment – the role of government support, particularly the clarity and effectiveness of policy interventions in encouraging innovation adoption;

(iii) Barriers to innovation – including the effects of Ukraine's unstable economic environment, resource limitations, and the prevalence of risk-averse organizational cultures;

(iv) Collaboration and networking – the extent to which partnerships across the tourism ecosystem (*e.g.,* operators, hospitality providers, transport services, and government institutions) foster innovation capacity.

Interviewees were selected through a purposive sampling strategy, supplemented by expert referral (snowball sampling) to ensure that participants represented diverse perspectives from across the tourism ecosystem. Beyond purposive selection, specific inclusion criteria were applied to ensure participants' relevance and expertise:

- Participants were required to hold mid- to senior-level managerial or decision-making positions within their organizations, such as general managers, innovation or marketing directors, or operations managers;
- Each interviewee had at least 3 years of professional experience in the tourism or hospitality sector, with direct involvement in innovation-related activities, such as digital transformation, sustainability initiatives, or service design;
- To capture the multidimensional nature of tourism, interviewees were drawn from tour operators, hospitality providers, transportation service firms, destination management organizations, and government or NGO entities involved in tourism development;
- Respondents represented both western regions (e.g., Lviv, Zakarpattia), which are relatively stable, and central or eastern regions, which have been directly affected by the ongoing conflict, allowing for comparative insights.

This selection approach ensured that the 15 interviewees reflected a heterogeneous yet informed sample, capable of providing well-grounded insights into how innovation management operates under different institutional and geographical conditions within Ukraine.

To ensure rigor and consistency in data collection, the primary researcher, who conducted all interviews, underwent qualitative interviewing training focused on: effective probing techniques and maintaining neutrality; managing potential response bias by avoiding leading questions and encouraging open-ended, participant-driven dialogue; developing active listening skills to capture both verbal and non-verbal cues, even in virtual settings.

A pilot interview was conducted with one tourism professional to refine question wording and assess flow. Throughout the interviews, reflexive field notes were kept to document the researcher's impressions, emerging themes, and potential biases. During analysis, peer debriefing with two colleagues was used to cross-check interpretations and maintain analytical objectivity. Interviews were conducted virtually via secure video conferencing platforms to ensure accessibility and participation across regions. Each session lasted between 30 and 60 minutes, enabling sufficient depth while maintaining participant engagement. Respondents were purposively selected based on their professional expertise, managerial responsibilities, and active involvement in tourism-related innovation projects. This targeted selection ensured that the sample reflected knowledgeable perspectives from diverse tourism subsectors.

Case Study Analysis

In addition to surveys and interviews, the study incorporated case study analyses of selected companies that have successfully applied innovation management practices within the tourism sector in Ukraine. Case studies provided an opportunity to capture rich, context-specific insights and identify replicable models of innovation. The selection of cases was based on three key criteria:

(i) Demonstrated achievement in the effective implementation of innovation management strategies;

(ii) Availability of detailed documentation and longitudinal data regarding organizational performance, innovation outcomes, and strategic practices over time;

(iii) Diversity in industry representation and organizational scale, ensuring that findings captured perspectives from various tourism subsectors, including hospitality, travel operations, and transport services, as well as both small and large enterprises.

The case studies were systematically analysed to identify best practices, recurring challenges, and critical performance indicators relevant to innovation management in the tourism business. Attention was placed on examining how these organizations integrated innovation to (i) minimize negative impacts on the physical environment through sustainable practices; (ii) enhance customer engagement by leveraging digital and experiential innovations; and (iii) strengthen overall competitiveness and long-term business performance.

Sampling Strategy

Purposive and snowball sampling techniques were used to select the research participants and organizational case studies, as they are aimed at obtaining relevance and depth of information. In the case of the quantitative survey, purposive sampling was used to determine the professionals who have proven experience in the process of implementing innovation management in the tourism sector in Ukraine. Tourism business participants were recruited by using a mixture of email invitation, professional networks, and referrals, and only those people were selected who had sufficient knowledge of tourism business practices. In order to have statistical strength, the researcher aimed to obtain at least 300 valid survey data, which were enough to provide adequate power to conduct meaningful quantitative analysis and generalization. In the case of the qualitative interviews, the snowball sampling technique was used in an attempt to access a broader pool of experienced practitioners and managers.

The selected first respondents belonged to the specified study sample of professionals who are employed in the innovation projects of tourism. These respondents were subsequently contacted to bring in more capable professionals, hence the addition of the number of interviewees. The resulting sample of this sampling procedure was the 15 key informants, who comprised managers, service providers and practitioners who have a deep understanding of the issue of innovation and opportunities in the sector. The selection of the case studies was carried out using a multi-criteria approach. The five companies have been chosen with the purpose of getting an industry-wide view of the innovation management practice. The inclusion criteria (i) must be evidence of successful application of the innovation strategies; (ii) must possess extensive and realistic long-term performance data; and (iii) must reflect on the various subsectors and organization size.

To enhance the legitimacy of the finding, the situations were cross-correlated with the information regarding the previous scholarly materials, reports and recommendations of the experts in the field. The reason why this multi-prong sampling plan was chosen was to make sure that the study would be based on what was broad yet had the highest chances of being relevant to the study balance in terms of breadth and depth. The analysis of the survey information, the insight into the understanding of the knowledge acquired during the interview, and the witness of the case study contributed to having a deeper and more holistic outlook on innovation management as one of the influences that enhances not only the competitiveness but also the sustainable growth of the tourism sector in Ukraine.

1.3. Data Analysis Procedures

Quantitative Analysis

A combination of descriptive and inferential statistics was used to process the survey data to incorporate general trends and the intensity of correlation between variables. The application of descriptive statistics, including measures of central tendency (mean and median) and dispersion (standard deviation, minimum, and maximum values), was employed to provide the overall approach to the respondents' perceptions towards the innovation management practices within the Ukrainian tourism industry. Measures of skew, kurtosis and the Jarque-Bera test to assess the normality of. The data were used to determine the distributional properties of the data in order to confirm that the latter would be suitable to proceed with the subsequent parametric tests. Categorical responses were additionally summarized with frequency distributions to provide a better understanding of the trends in the sector and the practice of managers.

To examine relationships between key constructs, a cross-sectional regression analysis was conducted, allowing for the identification of statistically significant predictors of tourism business development outcomes in relation to innovation management practices. The analysis sought to determine the extent to which factors such as digital transformation, sustainability initiatives, and collaborative networks influenced organizational performance and competitiveness. Additionally, *t-tests* were employed to measure significant differences between groups, such as organization size, industry sub-sector, or level of innovation adoption.

The quantitative component employed a rigorous combination of descriptive and inferential statistical methods to ensure validity, reliability, and interpretability. The use of *cross-sectional regression* was justified by the research objective of identifying predictors of performance across a diverse sample of tourism enterprises. Diagnostic testing ensured that the model satisfied key assumptions of OLS estimation, while the clearly defined variables and composite indices allowed for systematic measurement of innovation and performance constructs. This quantitative framework provided robust empirical evidence to complement the qualitative findings and to support a comprehensive, mixed-methods understanding of innovation management in Ukraine's tourism recovery and competitiveness.

A cross-sectional regression model of the following form provides a useful basis for evaluating the impact of innovation management on the development of tourism business in Ukraine:

$$\text{Development of tourism business} = f(\text{Innovation management, other variables}) \quad (1)$$

Equation (1) is further specified as follows:

$$Y_i = \alpha + \beta_1 Newtc_i + \beta_2 Proces\_im_i + \beta_3 Mktin_i + \beta_4 Busize_i + \beta_5 Geo\_loc_i + \varepsilon_i \quad (2)$$

where Y_i represents the development of the tourism business in Ukraine, proxied by revenue growth, GDP contribution, and customer satisfaction. INVM represents the vector of innovation management variables, including new technology adoption, process improvement, marketing innovation, business size, and geographical location. X denotes the set of additional control variables included in the model. α and β are parameters to be estimated, i denotes the cross-sectional unit, and ε_i is a Gaussian white noise error term. Consequently, three models (reflecting each of the three performance outcomes) were estimated.

Qualitative Analysis

Interpretation of interview transcripts followed a thematic analysis approach since it enabled the researchers to differentiate, classify, and describe the patterns in the depiction of meanings in the qualitative data. It began with a close copying and perusal of the transcription of the records of the interviews, so that one would know what they had read. Coding was then performed, and meaningful concepts were identified using the inductive (as determined by the data) and deductive (based on the objectives of the research) codes. The frequency counts in specific categories of coding were useful to identify similar phenomena and events, which ensured that the most prominent issues in the area of innovation management were summarized in an organized manner. The analysis was done to facilitate analysis, accuracy, and reliability with the use of Essential Software, which is a qualitative data analysis application that helped to organize, code and group data in terms. Such online assistance made the process of analysis more transparent and decreased the human aspect of the researcher through the systematic tracking of codes and discerning themes.

The thematic analysis exhibited a series of shared themes that revealed the strategic innovation strategies, as well as the barriers and enablers influencing tourism businesses in Ukraine. Specifically, themes highlighted the importance of clear innovation strategies, supportive policy environments, challenges stemming from economic instability and risk aversion, and the role of collaboration across the tourism ecosystem. These observations were in line with the quantitative results, providing a more contextual insight and vision of the role that the innovation management practice will play in enhancing resilience and competitiveness and the long-term development of the tourism sector.

The qualitative analysis followed a rigorous, hybrid thematic coding process involving two coders, intercoder reliability assessment, and systematic use of qualitative data analysis software to enhance transparency and reproducibility. This methodological rigor ensured that the resulting themes accurately reflected both the lived experiences of tourism professionals and the structural factors shaping innovation management in Ukraine's tourism industry. The emergent themes complemented the quantitative results, collectively providing a comprehensive and empirically grounded understanding of innovation-driven recovery and competitiveness in the sector.

Sample Study Analysis

The largest source of evidence for the case study aspect of the study was electronic copies of company reports, project documentation, and archival materials. Successful analysis of such materials was made to bring about consistency, traceability, and richness of organizational knowledge. The findings of the data gathered were presented in terms of cross-case synthesis to enable the combination of more than one organization without affecting the quality of the specific case. Using the approach utilized, the predominant innovation management practices, common to the companies, and the firm-specific strategies might be determined. It was examined in a cyclic manner since it began with within-case analysis to examine the innovation, challenges and record results of each company. Comparisons of these individual findings were made in order to determine convergent patterns and divergent practices. It was focused on the assessment of the relation between the innovation strategies and the end result of the performance: improved interaction with customers, green policy, implementation of the digital transformation, and overall competitiveness.

The cross-case synthesis method allowed the study to not only identify the best practices in the area of innovation management, but also identify the industry-specific limitations that may prevent further growth. This multi-layered process provided a more detailed perspective on how the organizations operating in the tourism sector in Ukraine operationalize the process of innovation management and what outcomes they get as a result. Overall, the analysis has helped advance the theoretical knowledge and practice that will be highly beneficial in the future to policymakers, industry participants, and tourism firms interested in the creation of resiliency and sustainable development within a transitional economy.

Validity and Reliability

The results of the study needed various measures to be carried out at different levels in order to be sound, valid and reliable.

- Survey Instrument and Pilot Testing -The survey was piloted on a small group of tourism professionals chosen before the actual implementation of the survey. The response received was to simplify the phrasing of the questions by removing unnecessary words and making them easier and more understandable, and culturally/contextually aware. This process enhanced the content validity of the tool and minimized the chances of bias in the answer;
- (ii) Data Triangulation- To enhance the construct validity, the study has used a triangulation method that has integrated three data sources, such as surveys, semi-structured interviews and case studies, which are complementary. It was methodological pluralism that the findings were not built upon one hand but offered different sides of the view, and contributed to making the findings more valid;
- (iii) Cross-Checking with the Interviewees, member validation, there was maintenance of the cross-checking of results of the interviews that would always be cross-validated with the participants in order to define the correctness and authenticity. This is also going to be a second testament to the fact that the researcher was documenting an interpretation that was based on what the interviewees stated, and he minimized the risks of biases in the study;
- Coding and Reliability Checks - In no event other than possible, with qualitative data, a pre-existing coding scheme was applied, but inductively derived codes were improved. To achieve inter-coder reliability, a second researcher was used in the coding process, and discussions were held until they arrived at an agreement. It is due to the practice that the results in terms of their themes became more credible and reproducible.

The study ensured a high level of validity (internal, construct, and external) and reliability, thereby reinforcing the academic rigor of the mixed-methods design. These methodological safeguards not only improved the accuracy of findings but also contributed to the credibility and transferability of insights for both academic and policy audiences.

2. Research Results

This section presents the empirical findings of the study, integrating evidence from descriptive statistics, regression analysis, and qualitative insights. The results provide a comprehensive evaluation of how innovation management influences tourism performance in Ukraine across multiple dimensions.

The following Tables 1-3 summarize the findings identified in the quantitative survey, qualitative interviews and case study analysis.

2.1. Descriptive Statistics

The descriptive statistics provide an initial overview of the distribution, variability, and central tendencies of the main variables used in the analysis.

Table 1: Descriptive Statistics

	Rev-grt	Newtc	Cust.satisf	mktin	Bu size	Geo-loc	GDP%
Mean	5.821	3.451	7.101	3.219	4.803	0.621	6.453
Maximum	10.891	4.601	8.201	4.504	5.601	1.001	8.208
Minimum	-2.401	2.101	5.801	2.001	3.901	0.001	4.906
Std. Dev.	2.318	0.721	0.721	0.814	0.551	0.481	1.101
Skewness	2.617	0.182	0.561	0.311	0451	0.612	0.511
Kurtosis	7.112	2.318	2.171	2.147	2.179	2.810	5.512
Jarque-Ber	14.23	2.341	4.614	5.815	3.171	0.613	7.151
Probability	12.5E-09	0.241	0.412	0.051	0.019	0.349	0.412

Sources: Author's computation

The results reported in Table 1 indicate that the tourism sector in Ukraine is characterized by moderate average performance but significant heterogeneity across firms and regions. Revenue growth exhibits a mean value of 5.82, accompanied by a relatively high standard deviation (2.32), suggesting uneven recovery trajectories. The pronounced positive skewness further indicates that a limited number of firms achieve substantially higher growth, while many remain below the average.

Innovation-related variables, including new technology adoption (mean = 3.45), marketing innovation (3.22), and process improvement, display moderate levels of adoption with relatively stable dispersion, suggesting that innovation practices are present but not uniformly diffused. Customer satisfaction remains consistently high (mean = 7.10), indicating that firms have maintained service quality despite operational and environmental constraints.

The geographical distribution variable (mean = 0.62) confirms the concentration of tourism activity in relatively stable regions, highlighting spatial disparities in both innovation adoption and economic recovery. The presence of non-normality in revenue growth, as indicated by skewness and kurtosis values, justifies the application of robust econometric techniques in subsequent analysis. These findings suggest that while innovation is increasingly adopted within the sector, its impact remains uneven, necessitating further investigation through regression analysis.

2.2. Regression Results

To examine the determinants of tourism performance, a cross-sectional regression analysis was conducted, focusing on three dependent variables: revenue growth, GDP contribution, and customer satisfaction.

The cross-sectional regression results presented in Table 2 provide robust empirical evidence on the determinants of tourism business performance and competitiveness in Ukraine, measured through three dependent variables: revenue growth, GDP contribution, and customer satisfaction. Across all models, the results reveal that new technology adoption exerts a consistently positive and statistically significant influence on all performance indicators (β = 0.4211, 0.3125, 0.5014, respectively).

Table 2: Cross-Sectional Regression Results

Independent Variables	Dependent Variables		
	Revenue Growth	GDP Contribution	Customer Satisfaction
New technology	0.4211***	0.3125**	0.5014***
	(0.319)	(0.428)	(0.032)
	[0.081]	[0.129]	[0.091]
Process involvement	0.2851**	0.1541	0.3411**
	(0.413)	(0.172)	(0.2612)
	[0.112]	[0.1342]	[0.1281]
Marketing innovation	0.3671***	0.2981**	0.2991*
	(0.218)	(0.3122)	(0.2713)
	[0.101]	[0.1224]	[0.1311]
Business size	0.2113	0.4015***	0.1931
	(0.1341)	(0.2118)	(0.3112)
	[0.1242]	[0.1372]	[0.1451]
Geographical location	0.1451	0.1782*	0.1214
	(0.2752)	(0.3181)	(0.2012)
	[0.098]	[0.107]	[0.1152]
Model Diagnostics			
Indicator	Revenue Growth	GDP Contribution	Customer Satisfaction
R^2	0.642	0.589	0.671
Adjusted R^2	0.615	0.561	0.646
F-statistic	23.41	19.27	25.89
Prob (F-statistic)	0.000	0.000	0.000
Mean VIF	2.115	2.013	2.311
Durbin–Watson	1.922	1.815	1.902
BPCW (p-value)	0.7812	0.3195	0.4168
	[0.2551]	[0.9121]	[0.5119]
RESET (p-value)	0.6142	0.8133	0.7492
	[0.4118]	[0.6219]	[0.5137]

Note: * p < 0.10, ** p < 0.05, *** p < 0.01. Values in () denote standard errors; values in [] denote additional test statistics. VIF, DW statistic, BPCW test for heteroskedasticity; RESET test.

Source: Authors' computation from estimation data

This finding underscores the critical role of digital transformation particularly through platforms, AI-driven marketing, and automation in driving post-war recovery, operational efficiency, and customer engagement within the tourism sector. Similarly, marketing innovation demonstrates a significant positive effect on revenue growth (β = 0.3671) and GDP contribution (β = 0.2981), and a moderate effect on customer satisfaction (β = 0.2991*), highlighting the importance of digital marketing, brand differentiation, and experiential design in sustaining competitiveness. Process involvement, representing internal innovation practices such as workflow optimization and staff upskilling, also emerges as a key driver of both revenue (β = 0.2851) and customer satisfaction (β = 0.3411), suggesting that managerial commitment to continuous improvement translates into tangible performance benefits.

In contrast, business size shows a significant positive relationship with GDP contribution (β = 0.4015), but not with revenue growth or customer satisfaction, implying that larger firms contribute more substantially to the national economy, yet innovation-driven advantages are not limited to scale. Geographical location reflecting firms' placement in safer western regions versus conflict-affected zones-has a weaker and only marginally significant association with GDP contribution (β = 0.1782*), indicating that regional disparities persist but may be mitigated by firm-level innovation capacity. The models exhibit strong explanatory power (R^2 ranging from 0.589 to 0.671) and satisfactory adjusted R^2 values, confirming that the independent variables collectively explain a substantial proportion of the variation in performance outcomes. Diagnostic tests suggest that the models are well-specified: mean VIF values below 2.5 confirm the absence of multicollinearity; Durbin-Watson statistics around 2 indicate no autocorrelation; Breusch–Pagan–Cook–Weisberg (BPCW) and RESET tests confirm homoscedasticity and correct model specification.

Overall, these results provide compelling support for the hypothesis that innovation management especially the integration of digital technologies, process improvements, and marketing innovation is a significant determinant of resilience and performance in Ukraine's tourism sector. The findings further suggest that while larger and geographically advantaged firms have structural advantages, strategic innovation adoption can offset regional and scale disparities, promoting more inclusive and sustainable recovery across the industry.

2.3. Qualitative Insights

To complement the quantitative findings, qualitative evidence was obtained through semi-structured interviews with tourism sector stakeholders, allowing for a deeper understanding of the contextual and behavioural dimensions of innovation management.

The use of qualitative interview assessment in Table 3 enables us to have good information on the impacts of innovation management on tourism development in Ukraine. As presented above, the findings show that there are a few important dimensions, including innovation strategy alignment, digitalization processes, technology adoption, and collaborative networking in the tourism ecosystem.

Table 3: Key Themes from Qualitative Interviews on Innovation and Firm Performance"

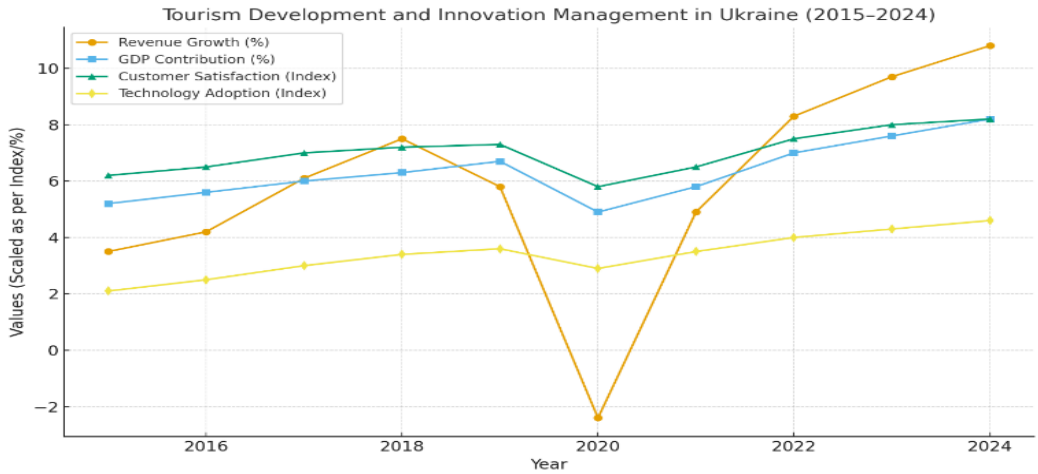
Theme	Description	Representative Quote
▪ Innovative strategy alignment	▪ Many companies have a clear innovation strategy	▪ "Those with a strong strategic focus tend to perform better in terms of growth."
▪ Government support policy	▪ Government support is critical for fostering innovation	▪ "Government policies need to be clear and supportive to encourage innovation."
▪ Digitization and technology adoption	▪ Many businesses are lagging behind in adopting new technologies	▪ "Companies that quickly adopt digitalization and new technologies tend to achieve higher growth."
▪ Barriers to innovation	▪ Unstable macroeconomic environment and risk-averse behaviour limit innovation	▪ "Overcoming these barriers is key to improving growth."
▪ Collaboration within the industry	▪ Emphasis on collaboration among firms in the same sector	▪ "Collaboration and togetherness lead to better outcomes."

Source: Authors' qualitative analysis based on interview data

2.2. Trend Analysis of the Tourism Innovation Monument

The graphical evidence in Figure 1 demonstrates that tourism development in Ukraine exhibited both resilience and volatility across the study period. Revenue growth fluctuated sharply, with negative growth in certain years with a minimum value of –2.40 followed by a peak of 10.89, underscoring the sector's vulnerability to external shocks but also its capacity for recovery.

Figure 1: Trend Analysis Tourism Development and Innovation Management in Ukraine



Source: Authors' elaboration based on survey data and empirical analysis.

Based on the below Table 4 theoretical and empirical literature, the explanatory variables included in the model are expected to exert predominantly positive effects on the dependent outcomes (revenue growth, GDP contribution, and customer satisfaction). New technology adoption, process improvement, and marketing innovation are anticipated to enhance firm efficiency, competitiveness, and service quality, thereby increasing growth and satisfaction. Business size is expected to contribute positively, particularly to GDP, due to economies of scale and resource capacity of larger firms. Geographic location is expected to yield mixed outcomes: firms in urban centers may benefit from infrastructure and accessibility advantages, while customer satisfaction is likely to depend more on the quality of innovation than location. These a priori expectations establish the theoretical grounding for the regression estimations.

Table 4: Key Parameters of Model

Variable (short)	Definition / Measurement	A-priori sign	Rationale
New Technology (Newtc)	Index of digital/technical adoption (online booking, mobile apps, AI, VR)	+	Digital tools improve efficiency, personalization and market reach → higher revenues, greater GDP contribution and improved customer satisfaction (Li et al., 2018).
Process Improvement (Proces-im)	Index of operational/process innovations (service re-engineering, quality systems, automation)	+	Better processes raise service quality and reduce costs, leading to higher firm performance and satisfaction (Tussyadiah & Fesenmaier, 2009; Hjalager, 2010).
Marketing Innovation (Mktin)	Index of innovative marketing practices (digital campaigns,	+	Innovative marketing increases visibility, demand and customer targeting → higher arrivals, revenues and satisfaction (Zeng & Gerritsen, 2014; El Archi et al. (2023)

Variable (short)	Definition / Measurement	A-priori sign	Rationale
	targeted promotion, social media & AI marketing)		
Business Size (Busize)	Log of number of employees or firm size category	+ / stronger for GDP%	Larger firms typically have greater resources to invest in innovation and scale returns; scale effects often produce larger macro (GDP) contributions (Schumpeter, 1934; Dobrovolska et al., 2023).
Geographical Location (Geo-loc)	Dummy or index (urban = 1/rural = 0 or distance/ accessibility measure)	+ / ambiguous	Urban locations commonly offer better infrastructure, demand and network effects → positive for revenues and adoption. However, location could be ambiguous for satisfaction (service quality may be independent of location).

Sources: Theoretical expositions

Equational model

A cross-sectional regression model of the following form provides a useful basis of evaluating the impact of innovation management on the development of tourism business in Ukraine:

Development of tourism business = f (Innovation management, other variables) (1)

Equation (1) is further specified as follows:

$$Y_i = \alpha_0 + \alpha_1 INVM_i + \beta_i X' + \varepsilon_i \quad (2)$$

where *Y* is a vector of development of tourism business in Ukraine which was proxied by revenue growth, GDP contribution to tourism and customer satisfaction in Ukraine. INVM represents the vector of innovation management variables, including (Newtc, Proces-im, Mktin, Busize , Geo-loc). *X* denotes the set of additional control variables included in the model. The α and β are parameters estimated, *i* denotes cross section, and ε_t is a Gaussian white noise error term. Consequently, three models (reflecting each of the three performance outcomes)

3. Discussion

The descriptive analysis presented in Table 1 provides critical preliminary insights into the performance dynamics of Ukraine's tourism sector and the role of innovation management in shaping firm-level outcomes. The mean revenue growth rate of 5.82% and a consistent GDP contribution of 6.45% underscore tourism's continued relevance to the national economy. However, the relatively high standard deviation of revenue growth (2.32) and its strong positive skewness (2.62) reveal substantial volatility, reflecting the sector's exposure to exogenous shocks such as geopolitical instability, the COVID-19 pandemic, and global market uncertainty. This pattern is consistent with prior research highlighting the structural vulnerability of tourism-dependent economies (UNWTO, 2022; Ivanov & Webster, 2021). In contrast to revenue volatility, innovation management indicators new technology adoption (mean = 3.45), marketing innovation (3.22), and process improvement (3.75) exhibit comparatively stable distributions, with moderate standard deviations ranging from 0.68 to 0.81 and near-normal distributions.

This stability suggests that firms have maintained consistent innovation practices despite adverse macroeconomic conditions. From a productivity perspective, such consistency is economically meaningful: sustained investment in process and digital innovations allows firms to reduce unit costs, stabilize operations, and maintain service delivery under uncertainty. Process improvements, in particular, reflect managerial efforts to streamline workflows, reduce waste, and optimize labour allocation, thereby enhancing total factor productivity even when output growth fluctuates. Customer satisfaction, with a mean value of 7.10, further reinforces the productivity-enhancing role of innovation management. Service innovation literature emphasizes that higher customer satisfaction is not only an outcome of innovation but also a mechanism through which firms improve capacity utilization, repeat demand, and revenue per customer (Hjalager, 2010; Pikkemaat & Zehrer, 2016). In this sense, innovation management contributes indirectly to cost efficiency by lowering customer acquisition costs and increasing the lifetime value of demand.

Geographic disparities remain evident, as indicated by the relatively low mean value for geographic location (0.62) and its associated variability, reflecting uneven spatial diffusion of innovation. This finding aligns with regional development studies that document the concentration of tourism innovation in urban and western regions of Ukraine (Vysochan, et al. 2021). Moreover, the Jarque–Bera statistics confirm that revenue growth and business size deviate significantly from normality, highlighting structural asymmetries in firm performance. These asymmetries imply that productivity gains from innovation are unevenly distributed, reinforcing the need for policy interventions that expand innovation capacity among SMEs and peripheral regions. The graphical evidence in Figure 1 further illustrates the dual nature of resilience and volatility in Ukraine's tourism development. Revenue growth exhibits sharp fluctuations, with negative values reaching –2.40 and peaks as high as 10.89, underscoring sensitivity to external shocks. Nevertheless, tourism's GDP contribution remains relatively stable (mean = 6.45), with moderate increases observed during 2021–2023. These periods coincide with intensified digitalization and process innovations, lending empirical support to the argument that innovation management enhances sectoral efficiency and buffers macroeconomic contribution during crises (Santos et al., 2021; Albeshchenko et al., 2025).

Customer satisfaction follows a steadily upward trend, reflecting the effects of marketing innovation, service customization, and digital engagement. Among innovation drivers, new technology adoption and process improvements display consistent growth patterns, while marketing innovation exhibits greater variability, suggesting experimentation and adjustment to changing demand conditions. Business size contributes moderately to development outcomes, whereas geographic diversification remains limited, reinforcing the conclusion that innovation-driven productivity gains are spatially concentrated.

The cross-sectional regression results reported in Table 2 provide more direct evidence of the productivity and cost-reduction mechanisms associated with innovation management. New technology adoption and marketing innovation emerge as the most significant predictors of revenue growth, supporting the view that digital transformation enhances firm efficiency by expanding market reach, reducing information asymmetries, and enabling personalized service delivery (Li et al., 2018). Process improvement also exerts a positive effect on financial performance, confirming that managerial innovations aimed at operational efficiency translate into higher productivity and improved cost control, consistent with experiential value creation frameworks (Hirna et al., 2022).

Business size remains a dominant determinant of GDP contribution, indicating that scale effects play an important role in converting innovation inputs into macroeconomic outcomes. This finding aligns with Schumpeterian theory (Schumpeter, 1934) and more recent evidence that larger firms possess greater absorptive capacity, enabling them to internalize innovation benefits more effectively (Dobrovolska et al., 2023). However, the positive spillover effects of new technology adoption and marketing innovation on GDP contribution suggest that innovation management generates benefits beyond firm boundaries, enhancing sector-wide efficiency and competitiveness.

New technology adoption exhibits the strongest effect on customer satisfaction, highlighting the role of digital platforms, mobile applications, and data-driven personalization in improving service quality and perceived value (Guttentag, 2015; Zeng & Gerritsen, 2014, Nicola-Gavrilă, 2023). Process improvement and marketing innovation further reinforce customer engagement by enhancing service reliability and communication effectiveness (Fletcher *et al.,* 2019). Notably, business size and geographic location are not significant predictors of customer satisfaction, indicating that consumer experience depends more on innovation quality than on firm structure or spatial positioning, a result consistent with Hjalager (2010).

4. Diagnostics and Model Robustness

The robustness and statistical validity of the regression models used in this research are validated through the diagnostic tests. To begin with, there is no multicollinearity among the independent variables as all the Variance Inflation Factor (VIF) values are below the conventional threshold of 10, indicating no significant multicollinearity among the independent variables. This implies that the proxies of the innovative management: technology adoption, process improvement, marketing innovation, firm size, and geographic location measure the different aspects of organizational practice.

Other previous research works on tourism innovation also reported similar results, with digital, managerial, and structural drivers being complementary but independent predictors of performance (Markevych & Oboz, 2021; Dimanche & Andrades, 2024; Pikkemaat & Zehrer, 2016). Tests of heteroskedasticity as indicated by the Breusch-Pagan test and White test indicate the absence of evidence of heteroskedasticity that means the observations have a constant variance of residuals. This is stable in contrast with previous empirical studies in transitional economies that tend to reported heteroskedastic effects because of small or skewed samples. The lack of heteroskedasticity in the present study, increases the plausibility of the estimates of the coefficients and further increases the validity of the conclusions made based on the regression findings.

Further tests on normality on residues support the claim that the error distribution is normally distributed and fits the Ordinary Least Squares (OLS) estimation assumptions. The result is in line with empirical evidence like that of Dobrovolska et al. (2023) that highlighted the necessity of normally distributed errors when assessing causal relationships between innovation and an economy. The statistic of Durbin-Watson suggests that there is no auto-correlation, which is preferable in the cross-sectional data as it is assumed that observations are not dependent. This is opposed to the established time-series studies that investigate the innovation of tourism where autocorrelation is often common because of cyclical cycles of demand and investment (Ivanov & Webster, 2021).

Lastly, the Ramsey RESET test verifies that the model is specified correctly, and that there is no omitted variable bias, or that the model is not specified with an incorrect functional form. All the diagnostic findings are indicative to the fact that the empirical model is methodologically sound but theoretically strong. The lack of econometric violations contributes further to the credibility of the main conclusion of this paper that the management of innovation plays a major role in improving the competitiveness and growth of the tourism industry in Ukraine. These findings add to the accumulating literature on the innovation in transitional economies, in which model validity is of paramount importance as an element of both scholarly and policy significance (UNWTO, 2022; Yakymenko-Tereshchenko *et al.,* 2023).

In Table 3 qualitative interview assessments, there is sufficient insight into the role of innovation management in tourism development in Ukraine. The results have determined several key dimensions as can be summarized in Table 3, which are alignment of innovation strategy and processes of digitalization, adoption of technology, and collaborative networking in the tourism ecosystem. The interviewees were also eager to emphasize that companies with well-defined strategic plans are way ahead of the rest in terms of applying innovation to achieve sustainable growth (El Archi et al. 2023; Byelikova et al., 2024). In particular, the high rate of adoption of new technologies was said to create a significant business development, which can be compared to the idea of positive semantic implications of innovation introduced by Carroll (1991).

The respondents also noted that, despite the fact that the government of Ukraine has been more accommodative towards innovation, the support has been an issue. The current policies are not always able to provide the clear image of the direct stimulating effect on the rise in the revenues and the businesses should be given a stronger factor to move towards the sustainable innovation. These innovation barriers have been identified as the most critical ones: unstable economic climate, perception of financial risk, and comparatively risk-averse corporate culture deprive businesses the chance to invest in innovation initiatives. These restrictions will be aligned with the concept by Santos et al. (2021) who claimed that the atmosphere of stability and encouragement is the condition that must be provided to encourage the successful management of innovation. The thematic analysis then brings to the fore the fact that strategic leadership, technology adoption, strategy to invest resources and customer drive innovation is fundamental in ensuring that the business growth in the Ukrainian tourism sector takes place. Analysts pointed out that there is need to dismantle the existing obstacles to reach the revenue growth. Moreover, the government and the coherence of the policies must not only invest more in innovation in the tourism industry but also sustain it to reach the optimal potential of the field. This mixture of business strategies and institutional support is likely to be the backbone of transforming the tourism industry in Ukraine into a competitive and powerful sector in the global market.

Conclusion

This study examined how innovation management (INVM) influenced the development of Ukraine's tourism industry between 2015 and 2025, using revenue growth, GDP contribution, and customer satisfaction as key performance indicators. The results show that technology adoption, process improvements, marketing innovation, firm size, and geographical location significantly affect tourism performance and its economic contribution. Descriptive evidence reveals substantial variability in revenue growth and innovation practices, reflecting uneven digital adoption and regional disparities. Regression results confirm that technological and marketing innovations are particularly strong predictors of customer satisfaction and GDP contribution, underscoring their

importance for restoring competitiveness. Diagnostic tests support the robustness of the empirical models. Importantly, the findings demonstrate that management innovations enhance firm-level productivity and cost efficiency. Digital technologies and process improvements increase labour productivity by automating operations, improving capacity utilization, and optimizing resource allocation, thereby reducing unit operational costs. Marketing innovation lowers transaction costs by improving demand targeting and reducing customer acquisition expenses, enabling firms to stabilize revenues under volatile conditions. Together, these mechanisms shift firms toward more efficient production structures.

The results align with existing tourism and innovation literature (Pikkemaat & Zehrer, 2016; Ivanov & Webster, 2021) and extend it to a post-conflict, transitional economy. Innovation management emerges as a strategic capability that strengthens firm performance while generating macroeconomic spillovers. For policymakers and practitioners, embedding innovation-oriented frameworks within national reconstruction programs supported by targeted financing, digital skills development, and cross-sector collaboration is essential for accelerating modernization, reducing regional inequalities, and ensuring long-term competitiveness.

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Conflict of Interest Statement

The authors declare no conflict of interest. The research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request. Due to confidentiality agreements with participants, individual-level responses cannot be publicly shared, but aggregated data and analytical outputs are accessible for academic and research purposes.

Ethical Approval Statement

The research was conducted in accordance with established ethical standards for research involving human subjects. All respondents provided informed consent before data collection and were assured that their responses would be kept confidential and anonymous. The protocol under study was reviewed and approved by the Institutional Review Board (IRB), and it has adhered to the ethical principles of respect, beneficence, and justice. These practices protected the rights of the participants, reduced the risk that may occur, and strengthened the validity and integrity of the results of the study.

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