

Development of Tourism Accounting from the Perspective of Identified Consequences within Commercial Firms Active in This Industry

Rezvaneh Sadat. Seyedrezaei¹, Hasan. Valian^{1*}, Mohammadreza. Abdoli¹, Maryam. Shahri¹

¹ Department of Accounting, Sha.C., Islamic Azad University, Shahrood, Iran

* Corresponding author email address: hassan.valian@iau.ac.ir

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ABSTRACT

The objective of this study is to develop tourism accounting from the perspective of identified consequences within commercial firms operating in this industry. In terms of methodology, the present study can be considered exploratory, developmental, and mixed-method. In this study, through the use of interview tools and three stages of grounded theory coding, an initial attempt was made to present a paradigmatic model based on the approach of Strauss and Corbin (1998). After assessing the reliability of the identified dimensions using the Delphi technique, the second phase of the study focused on the identified consequences of tourism accounting. Specifically, it aimed to determine the most central dimension influencing the expansion of accounting functions in this industry, which, based on economic system policymaking, can be recognized as a reliable output. The qualitative findings of this study indicate the presentation of a paradigmatic model based on 50 conceptual themes and 10 core categories, forming five dimensions: causal conditions, contextual conditions, intervening conditions, strategies, and consequences of tourism accounting development. In the quantitative section of the study, it was found that the consequence of “more comprehensive disclosure of internal control weaknesses” (I₉) is the most significant outcome expected from the development of tourism accounting at the firm level in this industry, such that broader disclosure of performance-related information can facilitate the achievement of sustainability.

Keywords: *Tourism accounting, interpretive ranking, sustainability*

1. Introduction

The rapid expansion of the tourism industry over recent decades has transformed it into one of the most significant drivers of economic growth, employment generation, and socio-cultural exchange at both national and global levels. Tourism is no longer perceived merely as a leisure activity; rather, it has evolved into a complex economic system characterized by multidimensional interactions among stakeholders, including governments, private enterprises, local communities, and international markets. This transformation has intensified the need for robust accounting systems capable of capturing the unique financial, social, and environmental dimensions of tourism activities. Traditional accounting frameworks, primarily designed for manufacturing or standard service industries, often fail to adequately represent the distinctive characteristics of tourism operations, such as seasonality, intangible assets, dynamic pricing structures, and cross-border financial flows (Song et al., 2012; Stabler et al., 2010). Consequently, the emergence of tourism accounting as a specialized domain reflects an effort to bridge this gap by developing tailored accounting practices that align with the operational and strategic realities of the tourism sector (Karagiorgos et al., 2006; Siregar, 2023).

From a theoretical standpoint, the conceptualization of tourism accounting is rooted in the broader evolution of management accounting and its increasing orientation toward strategic decision-making. Contemporary management accounting extends beyond cost control and financial reporting to encompass performance measurement, value creation, and sustainability assessment. In tourism contexts, this shift is particularly critical because firms operate in highly competitive and volatile environments, where strategic insights derived from accounting information can significantly influence organizational performance (Adams, 2006; Azmi & Harti, 2021). Moreover, the integration of strategic management accounting techniques enables tourism enterprises to better evaluate investment opportunities, optimize resource allocation, and enhance their competitive positioning in global markets. The growing importance of such approaches underscores the necessity of developing accounting frameworks specifically adapted to tourism, where financial and non-financial indicators must be jointly considered to provide a comprehensive understanding of performance outcomes (Oktaviani, 2022; Oktayani et al., 2024).

In parallel, the increasing emphasis on sustainable development has further complicated the accounting landscape in tourism. Sustainability in tourism encompasses economic viability, environmental preservation, and social equity, requiring accounting systems that can measure and report on all three dimensions simultaneously. The concept of sustainability accounting has gained prominence as a response to these challenges, advocating for the integration of environmental and social considerations into traditional financial reporting frameworks. In the tourism industry, this integration is particularly relevant due to the sector's direct dependence on natural and cultural resources, which must be managed responsibly to ensure long-term viability (Bartolini et al., 2024; Pupovac & Nikidehaghani, 2024). Additionally, the application of tools such as the social accounting matrix provides valuable insights into the socio-economic linkages of tourism activities, enabling policymakers and managers to assess the broader impacts of tourism development on local economies (Bhatt & Nunjal, 2013; Santos, 2012). These developments highlight the critical role of tourism accounting in supporting sustainable decision-making processes.

The economic significance of tourism also necessitates advanced analytical approaches to understand its contribution to national and regional development. Tourism has been identified as a key sector capable of stimulating economic growth, generating employment, and fostering entrepreneurship, particularly in developing countries. The sector's capacity to create jobs across a wide range of skill levels makes it an essential component of inclusive economic development strategies (Abby & Geoffrey, 2006; Koens & Wood, 2017). Furthermore, tourism-driven growth models have been extensively analyzed to determine their effectiveness relative to alternative development pathways, with evidence suggesting that tourism-led growth can provide substantial economic benefits when supported by appropriate policy frameworks and institutional capacities (Nugroho & Verikios, 2025; Suparman, 2023). However, the realization of these benefits depends on the availability of accurate and comprehensive accounting information, which can guide investment decisions and policy interventions.

Despite these advancements, the development of tourism accounting remains constrained by several conceptual and practical challenges. One of the primary issues is the lack of standardized terminology and frameworks, which hampers the comparability and consistency of financial reporting across tourism enterprises. Efforts to address this limitation have included the development of specialized accounting

dictionaries and software tools designed to standardize accounting practices within the tourism sector (Aristia Prayudi et al., 2019; Yuniarta, 2015). Additionally, regulatory and taxation complexities further complicate accounting practices in tourism, as firms must navigate diverse legal requirements and fiscal policies that vary across jurisdictions (Vasiljevic et al., 2015). These challenges underscore the need for a coherent and comprehensive accounting framework that can accommodate the unique characteristics of tourism while ensuring compliance with broader financial reporting standards.

Another critical dimension influencing the evolution of tourism accounting is the role of innovation and digital transformation. The adoption of advanced technologies, including data analytics, artificial intelligence, and digital platforms, has significantly altered the operational landscape of tourism enterprises. These technologies enable more efficient data collection, processing, and reporting, thereby enhancing the accuracy and timeliness of accounting information. Moreover, the integration of fuzzy logic and advanced decision-making models has facilitated the evaluation of complex and uncertain environments, which are characteristic of the tourism industry (Tang et al., 2020; Xian et al., 2024). The application of such techniques allows for more nuanced assessments of performance and risk, supporting more informed strategic decisions. At the same time, digital transformation has increased the expectations of stakeholders regarding transparency and accountability, further emphasizing the importance of developing sophisticated accounting systems tailored to the needs of the tourism sector.

The socio-cultural and institutional context also plays a crucial role in shaping tourism accounting practices. In many countries, the development of tourism is closely linked to broader strategies of urban development, cultural preservation, and community empowerment. For instance, city branding initiatives and urban tourism frameworks often rely on accurate accounting data to evaluate their effectiveness and sustainability (Hosami Naqshbandi et al., 2021). Similarly, the empowerment of local communities through tourism requires transparent and inclusive accounting practices that ensure equitable distribution of benefits and minimize negative externalities (Joo et al., 2020). In this regard, tourism accounting can serve as a critical tool for promoting accountability and fostering trust among stakeholders, thereby contributing to the overall success of tourism development initiatives.

Furthermore, the integration of tourism accounting into broader economic and policy frameworks highlights its strategic importance in national development planning. Governments and policymakers increasingly recognize the need for reliable accounting information to support evidence-based decision-making in the tourism sector. This includes the formulation of policies aimed at enhancing competitiveness, attracting investment, and promoting sustainable growth. Strategic analyses of tourism development, particularly in emerging economies, emphasize the importance of aligning accounting practices with national economic objectives and institutional capacities (Sargazi et al., 2020; Yaghoubi Manzari & Aghamiri, 2017). Additionally, the application of intrabusiness and macroeconomic analytical tools, such as social accounting matrices, provides valuable insights into the interdependencies between tourism and other sectors of the economy (Zlati et al., 2021). These insights are essential for designing integrated policies that maximize the benefits of tourism while mitigating its potential negative impacts.

In light of these considerations, it becomes evident that tourism accounting is not merely a technical function but a strategic instrument that can significantly influence the development and sustainability of the tourism industry. The complexity and dynamism of tourism activities necessitate accounting frameworks that are flexible, comprehensive, and capable of capturing both financial and non-financial dimensions of performance. Despite the growing body of research in this field, there remains a need for more systematic and integrated approaches to the development of tourism accounting, particularly in contexts where the industry is still evolving and institutional frameworks are underdeveloped. The present study seeks to address this gap by proposing a paradigmatic model for the development of tourism accounting, integrating qualitative and quantitative insights to identify the key drivers, mechanisms, and consequences of this process, with the aim of enhancing the effectiveness and sustainability of accounting practices in tourism industry firms.

2. Methods and Materials

Methodological classifications for understanding the nature of a study in the humanities are based on three criteria: purpose, outcome, and type of data. Accordingly, the present study should first be classified, in terms of purpose, as exploratory research, because the novel nature of tourism accounting in knowledge development and cognition lacks

sufficient conceptual coherence. Therefore, through interviews with experts, this study seeks to identify the contextual aspects of tourism accounting development, which—due to its distinctive role in differentiating from conventional accounting approaches—can enhance stakeholders' understanding of this phenomenon and contribute to the advancement of sustainability reporting practices across industries. From another perspective related to research purpose, this study should also be considered developmental, since the limited number of existing studies on this phenomenon does not provide sufficiently reliable foundations for a proper understanding of the functions of tourism accounting, at least at the present time. Thus, the study aims to propose a paradigmatic model for the more coherent development of this concept within influential domains of Iran's economic system. Finally, in terms of data type, the present study is mixed-method, grounded in an inductive–deductive philosophical foundation. While it seeks to expand the underlying dimensions of tourism accounting development through an abstract model, it simultaneously focuses on fuzzy evaluations of strategic contexts within the proposed model to enhance the understanding of future policymaking in this field of accounting knowledge and support sustainable development in the tourism industry. Accordingly, the analytical procedures employed to achieve the objectives of this study in the qualitative phase are based on grounded theory analysis using the approach of Strauss and Corbin (1998), whereby interviews with subject-matter experts are conducted and analyzed through three stages of open, axial, and selective coding to identify and classify the contextual aspects of the phenomenon within a paradigmatic framework. The categorizations derived from interview coding ultimately guide the study toward a theoretical framework presented as a paradigmatic model consisting of five dimensions: causal conditions, intervening conditions, contextual conditions, strategies, and consequences. Subsequently, in the quantitative phase of the study, and with the aim of addressing the second research question, matrix-based processes are employed to determine and explain the most central consequence identified from the qualitative phase within the study context.

Due to the mixed-method nature of the present study, participants in the qualitative phase consisted of certified public accountants and members of accounting standard-setting committees in Iran. The analytical nature of this study aims to develop a scientific paradigm encompassing the drivers of movement toward tourism accounting, as well as

the contextual and intervening conditions that shape the strategies and consequences of its application within the tourism industry. Therefore, it was necessary to select individuals with a high level of familiarity with emerging ideas in accounting knowledge. To achieve this, theoretical sampling and a snowball sampling process were employed to access experts with innovative perspectives in accounting, based on the following criteria to ensure expertise adequacy.

Experts were required to have at least 10 years of academic experience at leading universities in the field of accounting. They were also required to possess educational and cognitive backgrounds related to tourism from an accounting perspective, either through research activities or curricular content. In addition, they were expected to have sufficient teaching experience in advanced accounting theories and empirical research courses at the doctoral level.

The reliance on these criteria, alongside the snowball sampling process—whereby interviewees introduced other experts—was intended to identify specialists who could dedicate sufficient time to data collection and provide comprehensive insights into various aspects of the phenomenon, thereby contributing to the formation of a coherent scientific paradigm within accounting knowledge. Considering theoretical saturation as the criterion for concluding interviews and determining the sample size, a total of 14 experts participated in the qualitative data collection phase.

In the quantitative phase of the study, aimed at explaining the criteria derived from the qualitative phase, financial managers and heads of accounting departments in firms active in the tourism industry were selected through homogeneous and convenience sampling. The sample selection process focused on homogeneity and accessibility of participants. Drawing on prior studies such as Jian et al. (2024) and Tang et al. (2020), which suggest an optimal sample size of 15 to 30 participants for matrix analysis processes, a total of 25 knowledgeable individuals were selected for participation.

Data collection tools and procedures constitute a critical component of the analytical process in any scientific research and vary depending on the nature and context of the study, thereby distinguishing it from other research endeavors. As explained in the methodological analysis, the present study employs a mixed-method approach to data collection, which is elaborated below.

(a) Grounded Theory Approach and Delphi Analysis in the Qualitative Phase: Based on the grounded theory analytical approach using the framework of Strauss and

Corbin (1998), the primary tool for developing the paradigmatic model in this study is conducting interviews with selected experts involved in shaping the concept of tourism accounting. In this process, deep and unstructured interviews based on open-ended questions were initially used to identify conceptual themes. Following axial coding and the identification of the core components of the phenomenon, and through reference to the theoretical foundations of accounting knowledge, categories suitable for selective coding were determined to reconstruct the concept of tourism accounting within a paradigmatic model. In other words, through multiple interviews and iterative open coding conducted after each session, the initial dimensions of the core phenomenon were revealed. Subsequently, to achieve core components and maintain balance among the generated open codes, semi-structured interviews were conducted during axial coding to organize these codes into categories. Once theoretical saturation was reached and the recurrence of previous concepts and absence of new themes were confirmed, the interview process was concluded. Finally, through selective coding and theoretical alignment of the components derived from the propositional themes of open codes, the formulation of paradigmatic categories became possible. After identifying conceptual themes, core components, and categories of tourism accounting across the five dimensions—causal conditions, contextual conditions, intervening conditions, strategies, and consequences—the study employed the Delphi method to assess the reliability of the identified dimensions. In this process, by aligning conceptual themes with core components to validate the paradigmatic categories, a seven-point checklist was developed. Using the mean and the agreement coefficient (Kappa statistic), the reliability of the identified dimensions in forming the recognized categories was evaluated. Therefore, through two rounds of Delphi analysis aimed at achieving theoretical consensus, the study

confirmed or eliminated conceptual themes of tourism accounting within the context of tourism industry firms, enabling subsequent evaluation of these criteria through fuzzy analytical processes.

(b) Matrix Analysis Approach: In this section of the study, which focuses on explaining the consequences of developing the core phenomenon within tourism industry firms, interpretive ranking processes are applied as a form of multi-criteria decision-making (MCDM) approach. After confirming the reliability of dimensions through Delphi analysis and assigning specific codes to each validated core component from the previous phase, data collection in the quantitative phase is conducted using scoring checklists and pairwise comparisons. Accordingly, the required data are obtained by evaluating the row (i) and column (j) relationships of each core component based on four conditions: “V” indicating direct influence, “A” indicating inverse influence, “X” indicating mutual influence, and “O” indicating no influence, as assessed by participants. These matrix-based checklists are distributed among quantitative participants, and based on the highest frequency and the mode index, the matrix formation process described in the methodology is completed.

3. Findings and Results

Based on the mixed-method nature of the present study, the research findings are presented in both qualitative and quantitative forms. In this regard, following the study’s approach to data collection through interviews and the implementation of the three-stage coding process, Table (1) is presented as the foundational context for the development of tourism accounting. In this table, conceptual themes, core components, and structural categories are identified and used to construct the paradigmatic model of the central phenomenon.

Table 1

Paradigmatic Coding of Tourism Accounting

Paradigmatic Conditions	Category Description	Selected Categories	Conceptual Themes
Causal Conditions	Necessity of the emergence of tourism accounting	Necessities of adopting tourism accounting	Differences in financial perspectives Differences in the nature of accounting procedures in tourism compared to other commercial domains Inconsistency of financial tourism expertise with other commercial fields Differences in technical accounting education in tourism compared to other commercial sectors

		Differences in classification of account nature	<p>Differences in resource financing in tourism compared to other industries</p> <p>Differences in accounting objectives in tourism relative to other commercial domains</p> <p>Differences in coding of tourism accounts compared to other accounting domains</p> <p>Differences in operational standards in tourism compared to other accounting procedures</p> <p>Differences in processing tourism financial events compared to other commercial operations</p> <p>Differences in preparation of tourism financial reports compared to other disclosure methods</p> <p>Differences in tourism account groups compared to other accounting groups</p>
Intervening Conditions	Formation of tourism accounting	<p>Drivers of sustainability reporting</p> <p>Economic sustainability functions</p>	<p>Social sustainability functions</p> <p>Protection of future generations' rights through tourism financial development</p> <p>Attention to ecotourism development</p> <p>Creation of new employment opportunities</p> <p>Increase in potential income from tourism development</p> <p>Development of citizen-centered tourism</p> <p>Shortage of allocable resources in economic governance</p> <p>Expansion of economic infrastructure in tourism</p> <p>Increase in GDP through tourism</p> <p>Capacity for liquidity جذب through tourism</p> <p>Economic growth through tourism</p>
Contextual Conditions	Facilitators of tourism accounting development	<p>Facilitating mechanisms related to firm characteristics</p> <p>Strategic mechanisms</p>	<p>Systemic mechanisms</p> <p>Software automation of tourism-related accounting systems</p> <p>Financial control and reconciliation systems in tourism accounts</p> <p>Currency conversion capabilities in tourism accounting systems</p> <p>Information support systems for tourism financial statements</p> <p>Enhancement of online reservation systems for tourism financial accounts</p> <p>Investment capabilities in tourism financial technologies</p> <p>Growth of competitive tourism markets</p> <p>Sponsorship attractiveness of tourism firms</p> <p>Allocation of tax exemptions to tourism firms</p> <p>Allocation of incentives for tourism economic growth</p>
Strategies	Movement toward tourism accounting	<p>Implementation mechanisms of tourism accounting development</p> <p>Financial calculation strategies</p>	<p>Operational calculation strategies</p> <p>Evaluation of net return on investment relative to tourism investment costs</p> <p>Economic value added from tourism investment projects</p> <p>Determination of ROI relative to opportunity costs of attracting tourists</p> <p>VAT ratio in net tourism income</p> <p>Evaluation of market value added of tourism financial performance</p> <p>Calculation of value-added ratio to tourist investment</p> <p>Estimation of professional human resources relative to seasonal tourist growth</p> <p>Assessment of trained human resources relative to tourism revenue value added</p> <p>Calculation of liquidity turnover productivity from tourism infrastructure development</p>

Consequences	Outcomes of tourism accounting emergence	Specialization of outputs from tourism accounting implementation	Assessment of tourism investment costs relative to firm revenue generation Professional reporting standards outcomes
		Professional reporting competitiveness outcomes	Broader disclosure of R&D data in tourism Reporting on legal inspection cases Expansion of managerial interpretive reports Disclosure of details on tourism investment projects Reporting on investments in tourism startups Comparability of tourism financial reporting More dynamic information environment Disclosure of financial interactions in tourism More comprehensive disclosure of internal control weaknesses Transparency of informational risk details

Subsequently, to enhance the level of understanding regarding the identification of codes derived from the research interviews, additional information is provided based on frequency distribution. In fact, as shown in Table

(2), the classification of identified concepts based on the three-stage coding process—into themes, components, and categories of the tourism accounting development paradigm—is presented.

Table 2

Classification of Interview Codes

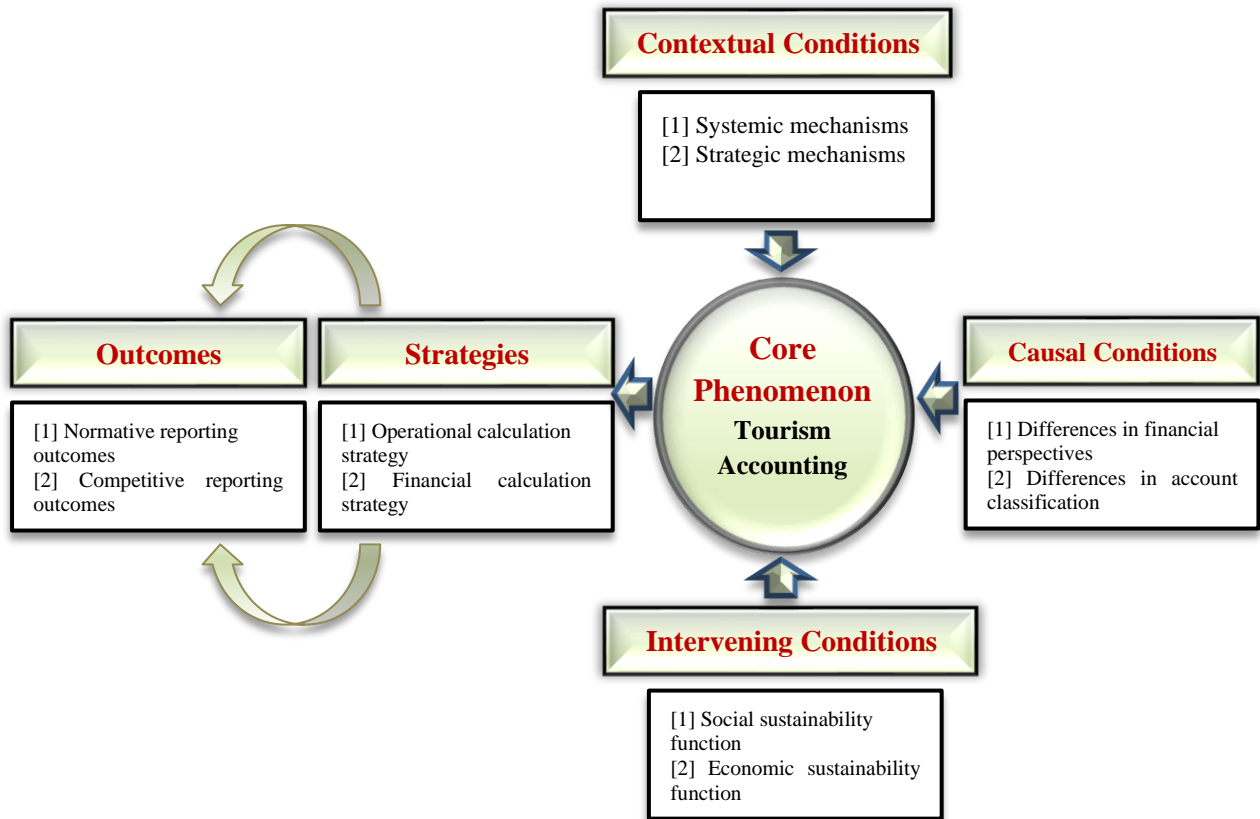
Paradigmatic Criteria	Categories	Components	Themes	Open Codes	Frequency Distribution
Causal Conditions	Necessities of adopting tourism accounting	Differences in financial perspectives	5	38	9.69%
		Differences in classification of account nature	5	42	10.71%
Intervening Conditions	Drivers of sustainability reporting	Social sustainability functions	5	40	10.20%
Contextual Conditions	Facilitators related to firm characteristics	Economic sustainability functions	5	37	9.43%
		Systemic mechanisms	5	39	9.94%
Strategies	Implementation mechanisms of tourism accounting development	Strategic mechanisms	5	41	10.45%
		Operational calculation strategies	5	43	10.96%
Consequences	Specialization of tourism accounting outputs	Financial calculation strategies	5	36	9.25%
		Professional reporting standards outcomes	5	39	9.94%
		Professional reporting competitiveness outcomes	5	37	9.43%
Total	Nine categories identified	Ten components identified	50	392	100%

As can be observed from Table (2), based on the frequency distribution of codes derived from the interviews, it is evident that from a total of 14 conducted interviews, which resulted in 392 open codes, a total of 50 conceptual themes, 10 core components, and 5 structural categories

were identified. Based on these results, the final framework of the tourism accounting paradigmatic model can be presented, as illustrated in Figure (5), within the context of Iran’s economic system.

Figure 1

Paradigmatic Framework of Tourism Accounting



With the identification of the different dimensions of the paradigmatic model for the development of tourism accounting, the next step, based on establishing the reliability of the conceptual themes in relation to the core

components for their explanation in the quantitative phase of the present study, is to employ Delphi analysis based on two criteria—mean and agreement coefficient—to determine the threshold of theoretical consensus.

Table 3

Two Rounds of Delphi Analysis

Components	Themes	First Delphi Round Mean	First Delphi Round Agreement Coefficient	Second Delphi Round Mean	Second Delphi Round Agreement Coefficient	Result
Differences in financial perspectives	Difference in the nature of accounting procedures in the tourism field compared with other commercial fields	5.40	0.65	5.55	0.72	Confirmed
	Incompatibility of financial tourism specializations with other business fields	5.10	0.58	5.30	0.65	Confirmed
	Difference in the type of technical accounting training in tourism compared with other sectors of the commercial field	5.50	0.70	6.10	0.82	Confirmed
	Difference in the nature of resource financing in the tourism industry compared with other financing methods in other industries	5.20	0.62	5.50	0.70	Confirmed

	Difference in the nature of accounting objectives in tourism compared with other commercial fields	6.20	0.85	6.30	0.88	Confirmed
Differences in the classification of the nature of accounts	Difference in the coding of tourism accounts compared with other areas of commercial accounting	6.10	0.82	6.30	0.85	Confirmed
	Difference in the operational standards of the tourism field compared with other operations in commercial accounting procedures	5.45	0.68	5.60	0.73	Confirmed
	Distinct nature of processing tourism financial events compared with other operations in the commercial domain	5.20	0.62	5.30	0.65	Confirmed
	Difference in the preparation of tourism financial reports compared with other methods of data disclosure in commercial fields	5.30	0.65	5.50	0.70	Confirmed
	Difference in tourism account groups compared with other groups of commercial accounting	5.00	0.50	5.15	0.60	Confirmed
Social sustainability functions	Protection of the rights of future generations through the development of tourism financial resources	5.50	0.70	6.10	0.82	Confirmed
	Attention to the development of ecotourism	6.00	0.80	6.10	0.82	Confirmed
	Creation of new employment opportunities	6.20	0.65	6.30	0.88	Confirmed
	Increase in the level of potential income through tourism development	5.30	0.65	5.45	0.68	Confirmed
	Development of citizen-centered tourism	5.10	0.58	5.30	0.65	Confirmed
Economic sustainability functions	Shortage of allocable resources in economic governance	6.00	0.80	6.20	0.84	Confirmed
	Extensiveness of economic infrastructure in the tourism sector	6.20	0.85	6.30	0.88	Confirmed
	Increase in gross domestic product through tourism	5.50	0.70	6.10	0.82	Confirmed
	Capacity to absorb liquidity through tourists	5.30	0.65	5.50	0.70	Confirmed
	Development of economic growth through tourism	5.00	0.50	5.15	0.60	Confirmed
Systemic mechanisms	Software automation of accounts related to the tourism industry	5.50	0.70	6.10	0.82	Confirmed
	Financial control and reconciliation systems in the financial statements of the tourism industry	5.20	0.62	5.30	0.65	Confirmed
	Capability of calculation and currency conversion in tourism accounting systems	6.20	0.85	6.30	0.88	Confirmed
	Information support systems for the data presented in tourism financial statements	5.30	0.65	5.45	0.68	Confirmed
	Strengthening online reservation systems for tourism financial accounts	5.45	0.68	5.65	0.74	Confirmed
Strategic mechanisms	Investment capabilities in tourism financial technologies	5.20	0.62	5.35	0.68	Confirmed
	Growth of the competitive tourism market	5.20	0.62	5.30	0.65	Confirmed
	Sponsorship attractiveness of tourism firms	5.30	0.65	5.35	0.68	Confirmed
	Allocation of tax exemptions to tourism firms	6.10	0.82	6.30	0.85	Confirmed
	Allocation of incentives for the prosperity of the tourism economy	6.00	0.80	6.10	0.82	Confirmed
Operational calculation strategies	Evaluation of net return on investment relative to investment costs in tourism	5.25	0.64	5.55	0.72	Confirmed

	Economic value added of the development of investment projects in the tourism sector	5.15	0.60	5.25	0.64	Confirmed
	Determination of the rate of return on investment in tourism relative to the opportunity cost of attracting tourists	5.20	0.62	5.35	0.67	Confirmed
	Ratio of value-added tax in net income of the tourism sector	5.50	0.70	6.10	0.82	Confirmed
	Evaluation of the market value added of financial performance in the tourism sector	6.20	0.85	6.30	0.88	Confirmed
Financial calculation strategies	Calculation of the ratio of corporate value added to investment in tourists	5.30	0.65	5.35	0.68	Confirmed
	Estimation of the proportionality of professional human resources to the seasonal increase in tourists	6.10	0.82	6.30	0.85	Confirmed
	Assessment of the number of trained human resources relative to the value added of tourism-generated revenues	5.00	0.50	5.15	0.60	Confirmed
	Calculation of the productivity ratio of liquidity turnover resulting from the development of service infrastructure for tourists	6.10	0.82	6.25	0.83	Confirmed
	Assessment of investment costs in tourism development in relation to firms' revenue generation	5.20	0.62	5.45	0.68	Confirmed
Outcomes of professional reporting standards	Broader disclosure of data related to research and development in tourism	5.40	0.65	5.55	0.72	Confirmed
	Presentation of data related to the number of cases subject to legal inspection	6.00	0.80	6.10	0.82	Confirmed
	Expansion of managerial interpretive reports	5.05	0.52	5.25	0.64	Confirmed
	Presentation of details related to investment projects in the tourism sector	5.20	0.62	5.35	0.67	Confirmed
	Reflection of information related to investment in the launch of tourism start-ups	5.30	0.65	5.35	0.68	Confirmed
Outcomes of the competitiveness of professional reporting	Comparability of tourism accounting financial reports	6.10	0.82	6.25	0.83	Confirmed
	More dynamic information environment quality	5.25	0.64	5.55	0.72	Confirmed
	Reflection of information related to affiliated financial transactions in tourism	5.15	0.60	5.25	0.64	Confirmed
	More comprehensive disclosure of internal control weaknesses	5.40	0.65	5.55	0.72	Confirmed
	Clarification of the details of information risks	5.20	0.62	5.35	0.67	Confirmed

Based on the research findings obtained from the two rounds of Delphi implementation, the results indicate the confirmation of all conceptual themes in relation to the core components. On the basis of this result, the study proceeded to the findings of the quantitative section in order to answer the second research question. This is because, according to the threshold determined for the mean criterion (≥ 5.00) and the agreement coefficient criterion (≥ 0.50), the conceptual themes of the strategic category can be extended for the explanation of these criteria in the quantitative phase of the study. In the quantitative section of this study, according to

the matrix evaluation process, an attempt is made to assess, through pairwise comparison, the most influential row-wise “i” and column-wise “j” relationships so that the second research question—namely, the determination of the most central consequence arising from the development of tourism accounting—can be answered. Therefore, on the basis of the explanation of matrix scoring relationships as follows, the first stage of constructing the interactive matrices is implemented.

The symbol “V” indicates the influence of the row component “i,” namely “B,” on the column component “j,”

namely “B’.” The symbol “A” indicates the reverse influence of “V,” meaning the influence of the column component “j,” namely “B’,” on the row component “i,” namely “B.” The symbol “X” indicates a bilateral and reciprocal influence of the row component “i,” namely “B,” on the column component “j,” namely “B’,” and vice versa. The symbol “O” indicates the absence of influence and the absence of

being influenced between the row component “i,” namely “B,” and the column component “j,” namely “B’.”

Accordingly, each of the abbreviated symbols “V,” “A,” “X,” and “O,” based on four types of row-wise “i” and column-wise “j” influence, was used to construct the Structural Self-Interaction Matrix (SSIM), as presented in Table (8).

Table 4

Structural Self-Interaction Matrix of Organizing Themes

Consequences of Tourism Accounting Development	I	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
Broader disclosure of data related to research and development in tourism	I1	[N]	A	A	A	A	V	X	V	A	V
Presentation of data related to the number of cases subject to legal inspection	I2		[N]	O	O	O	V	V	O	A	A
Expansion of managerial interpretive reports	I3			[N]	V	V	V	V	O	A	A
Presentation of details related to investment projects in the tourism sector	I4				[N]	X	A	A	O	O	V
Reflection of investment information in the launch of tourism start-ups	I5					[N]	V	V	O	O	O
Comparability of tourism accounting financial reporting	I6						[N]	X	A	A	A
More dynamic information environment quality	I7							[N]	A	A	A
Reflection of information related to affiliated financial transactions in tourism	I8								[N]	O	A
More comprehensive disclosure of internal control weaknesses	I9									[N]	V
											[N]

With the determination of the analytical abbreviated symbols in the self-interaction matrix presented in Table (8), the next step is to identify indirect influences among the themes by establishing a symmetric matrix relationship, so that, together with the other computable matrices, the

aggregate coefficients for each of the calculated themes can ultimately be determined. In this process, the intersection of the pairwise comparison between row “i” and column “j” must be interpreted in accordance with Table (9).

Table 5

Interpretive Analysis of the Polar Matrix

I10	I9	I8	I7	I6	I5	I4	I3	I2	I1	I
Y	Y	Y	[I1 ↔ I7]	Y	Y	Y	Y	Y	[N]	I1
Y	Y	Y	Y	Y	Y	Y	Y	[N]	[I2 ↔ I1]	I2
Y	Y	Y	Y	Y	Y	Y	[N]	Y	[I3 → I1]	I3
Y	Y	Y	Y	Y	[I4 ↔ I5]	[N]	Y	Y	[I4 → I1]	I4
Y	Y	Y	Y	[I5 ↔ I6]	[N]	[I5 ↔ I4]	Y	Y	[I5 → I1]	I5
Y	Y	Y	[I6 ↔ I7]	[N]	[I6 ↔ I5]	[I6 → I4]	Y	Y	Y	I6
Y	Y	Y	[N]	[I7 → I6]	Y	[I7 → I4]	Y	Y	[I7 → I1]	I7
Y	Y	[N]	[I8 ↔ I7]	[I8 → I6]	Y	Y	Y	Y	Y	I8
Y	[N]	Y	[I9 ↔ I7]	[I9 → I6]	Y	Y	[I9 → I3]	[I9 → I2]	[I9 → I1]	I9
[N]	Y	[I10 ↔ I8]	[I10 ↔ I7]	[I10 → I6]	Y	[I10 ↔ I4]	[I10 → I3]	[I10 → I2]	Y	I10

Next, based on the following abbreviated symbols, the reachability matrix must be constructed. The abbreviation “V” indicates that, when this symbol appears at the matrix intersection of a row and a column, component “B” in row “i” receives the value “1,” while component “B” in column “j” receives the value “0.” The abbreviation “A” indicates that, when this symbol appears at the matrix intersection of a row and a column, component “B” in column “j” receives the value “1,” while component “B” in row “i” receives the value “0.” The abbreviation “X” indicates that, when this

symbol appears at the matrix intersection of a row and a column, component “B” in row “i” receives the value “1,” and component “B” in column “j” also receives the value “1.” The abbreviation “O” indicates that, when this symbol appears at the matrix intersection of a row and a column, component “B” in row “i” receives the value “0,” and component “B” in column “j” likewise receives the value “0.” In fact, the purpose of this process is to convert the matrix function abbreviations into the coefficients “0” and “1,” thereby making it possible to construct the initial

reachability matrix, the results of which are presented in Table (11).

Table 6

Initial Reachability Matrix of Organizing Themes

Consequences of Tourism Accounting Development	I	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
Broader disclosure of data related to research and development in tourism	I1	[1]	0	0	0	0	1	1	1	0	1
Presentation of data related to the multiplicity of cases subject to legal inspection	I2	1	[1]	0	0	0	1	1	0	0	0
Expansion of managerial interpretive reports	I3	1	0	[1]	1	1	1	1	0	0	0
Presentation of details related to investment projects in the tourism sector	I4	1	0	0	[1]	1	0	0	0	0	1
Disclosure of investment information related to the launch of tourism start-ups	I5	1	0	0	1	[1]	1	1	0	0	0
Comparability of tourism accounting financial reporting	I6	0	0	0	0	0	[1]	1	0	0	0
More dynamic information environment quality	I7	1	0	0	0	0	1	[1]	0	0	0
Disclosure of information related to affiliated financial transactions in tourism	I8	0	0	0	0	0	0	0	[1]	0	1
More comprehensive disclosure of internal control weaknesses	I9	1	1	1	0	0	0	0	0	[1]	1
Clarification of the details of information risks	I10	0	1	1	0	0	0	0	1	0	[1]

After converting the abbreviated symbols of the self-interaction matrix into 0 and 1 in Table (11), the final reachability matrix must then be determined, as shown in

Table (12). In this matrix, the diagonal relationships that justify the reasons for the indirect influence of the three core components are indicated by the symbol “[1*].”

Table 7

Final Reachability Matrix of Organizing Themes

Consequences of Tourism Accounting Development	I	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
Broader disclosure of data related to research and development in tourism	I1	[1]	[1*]	0	0	0	1	1	1	0	1
Presentation of data related to the multiplicity of cases subject to legal inspection	I2	1	[1]	0	0	0	1	1	0	0	0
Expansion of managerial interpretive reports	I3	1	0	[1]	1	1	1	1	0	0	0
Presentation of details related to investment projects in the tourism sector	I4	1	0	0	[1]	1	0	[1*]	0	0	1
Disclosure of investment information related to the launch of tourism start-ups	I5	1	0	0	1	[1]	1	1	0	[1*]	0
Comparability of tourism accounting financial reporting	I6	0	0	0	0	0	[1]	1	0	0	0
More dynamic information environment quality	I7	1	0	0	0	0	1	[1]	0	0	[1*]
Disclosure of information related to affiliated financial transactions in tourism	I8	0	0	0	0	0	0	0	[1]	[1*]	1
More comprehensive disclosure of internal control weaknesses	I9	1	1	1	0	0	0	0	0	[1]	1
Clarification of the details of information risks	I10	0	1	1	0	0	0	0	1	0	[1]

Given that the levels of direct, indirect, and polar influence of the organizing themes have been identified, the next step is to determine the percentage scores of the total

influence levels, the results of which are presented in Table (13).

Table 8

Final Scoring Matrix of Organizing Themes

Organizing Themes	Code	Direct Influence	Polar Influence	Interpretive Influence	Total Influence	Comprehensive Influence Percentage	Ranking
	I1	5	2	1	8	20.0%	2nd
	I2	4	2	0	6	15.0%	4th
	I3	6	2	0	8	20.0%	2nd
	I4	4	2	1	7	17.5%	3rd
	I5	5	2	1	8	20.0%	2nd
	I6	2	1	0	3	7.5%	5th
	I7	3	2	1	6	15.0%	4th
	I8	2	4	1	7	17.5%	3rd
	I9	5	4	0	9	22.5%	1st
	I10	4	4	0	8	20.0%	2nd
Total		40	25	5	70		
Percentage		55.10%	16.32%	28.58%			

As shown, based on the determination of matrix weights, it was found that out of 70 matrix states evaluated through pairwise comparison between row “i” and column “j,” 40 states represented direct influence weights denoted by “V,” 5 states represented polar influence weights denoted by “[1*],” and 25 states represented symmetric influence in the form of “A” or “X.” Accordingly, these analytical processes demonstrated that the consequence of “more comprehensive disclosure of internal control weaknesses” (I9) is the most important consequence that can be expected from the development of tourism accounting at the firm level within this industry, such that broader disclosure of information derived from their performance can make the achievement of sustainability possible.

4. Discussion and Conclusion

The findings of the present study provide a comprehensive and integrative understanding of tourism accounting development through the identification of causal, contextual, intervening, strategic, and consequential dimensions within a paradigmatic framework. The qualitative results, derived from grounded theory analysis, revealed that the emergence of tourism accounting is primarily driven by fundamental differences between tourism activities and other commercial domains, particularly in terms of financial perspectives, account classification, and reporting requirements. These findings align with prior research emphasizing that tourism businesses operate under unique structural and operational conditions that necessitate specialized accounting frameworks (Karagiorgos et al., 2006; Siregar, 2023). The identification of differences in financial perspectives and account classifications as key causal conditions supports the argument that traditional accounting systems are insufficient to capture the complexity of tourism transactions, particularly those involving intangible assets, fluctuating demand patterns, and multi-stakeholder interactions (Adams, 2006; Song et al., 2012).

The study further highlights the critical role of intervening conditions, particularly social and economic sustainability functions, in shaping the development of tourism accounting. The emphasis on social sustainability—such as job creation, protection of future generations’ rights, and promotion of ecotourism—reflects the broader shift toward integrating non-financial dimensions into accounting practices. This finding is consistent with previous studies

that underline the importance of sustainability-oriented accounting frameworks in tourism, given the sector’s reliance on environmental and socio-cultural resources (Bartolini et al., 2024; Pupovac & Nikidehaghani, 2024). Similarly, the identification of economic sustainability functions, including GDP growth, liquidity جذب, and infrastructure development, reinforces the significance of tourism as a driver of economic development, as documented in tourism economics literature (Stabler et al., 2010; Suparman, 2023). These results suggest that tourism accounting must evolve to incorporate sustainability metrics that go beyond traditional financial indicators, thereby enabling a more holistic assessment of performance and impact.

The contextual conditions identified in this study, particularly systemic and strategic mechanisms, provide further insight into the enabling factors that facilitate tourism accounting development. The importance of technological infrastructure, such as software automation, financial control systems, and online reservation platforms, underscores the role of digital transformation in enhancing accounting capabilities within tourism firms. This finding is in line with research highlighting the growing importance of digital tools in improving accounting efficiency and decision-making in service industries (Oktaviani, 2022; Oktayani et al., 2024). Additionally, strategic mechanisms such as investment in financial technologies, tax incentives, and market competitiveness highlight the necessity of supportive institutional and policy environments for the successful implementation of tourism accounting practices. These results correspond with studies emphasizing the role of strategic management accounting in improving organizational performance and competitiveness (Azmi & Harti, 2021; Sargazi et al., 2020).

The strategic dimension of the model, encompassing operational and financial calculation strategies, further demonstrates the need for advanced analytical approaches in tourism accounting. The focus on evaluating return on investment, value-added metrics, and human resource productivity reflects the increasing demand for performance measurement tools that can capture the dynamic and multifaceted nature of tourism activities. These findings are consistent with the literature on management accounting, which advocates for the integration of financial and non-financial indicators to support strategic decision-making (Adams, 2006; Tang et al., 2020). Moreover, the use of matrix-based and fuzzy evaluation techniques in the

quantitative phase of the study aligns with recent advancements in decision-making methodologies, which emphasize the importance of handling uncertainty and complexity in organizational contexts (Xian et al., 2024).

One of the most significant contributions of this study lies in the identification and prioritization of the consequences of tourism accounting development. The results indicate that “more comprehensive disclosure of internal control weaknesses” emerges as the most central consequence, highlighting the critical importance of transparency and accountability in tourism accounting practices. This finding is consistent with prior research emphasizing the role of accounting in enhancing information quality and reducing asymmetry between stakeholders (Vasiljevic et al., 2015; Yuniarta, 2015). The emphasis on improved disclosure practices also aligns with the broader trend toward increased regulatory scrutiny and stakeholder demand for transparent reporting in the tourism sector. Additionally, other identified consequences, such as enhanced comparability of financial reports and improved information environments, further support the argument that tourism accounting can significantly contribute to the development of more efficient and competitive markets (Moncarz & Barone, 2020; Zlati et al., 2021).

The findings of this study also resonate with the broader discourse on the role of accounting in supporting sustainable tourism development. By integrating sustainability considerations into accounting practices, tourism firms can better align their operations with long-term environmental and social objectives. This alignment is particularly important in the context of increasing global emphasis on sustainable development, where tourism is both a contributor to and a beneficiary of sustainability initiatives (Koenigs & Wood, 2017; Lordkipanidze et al., 2005). Furthermore, the study’s emphasis on the role of accounting in facilitating policy decision-making underscores the importance of reliable and comprehensive data in shaping effective tourism policies (Bhatt & Nunjal, 2013; Santos, 2012).

Another important implication of the study relates to the role of knowledge and capacity building in the development of tourism accounting. The identification of expertise and training as key factors highlights the need for specialized education and professional development programs to equip accountants with the skills required to address the unique challenges of the tourism sector. This finding is supported by previous research emphasizing the importance of human capital in enhancing organizational capabilities and

performance (Aristia Prayudi et al., 2019; Joo et al., 2020). Additionally, the development of standardized accounting frameworks and terminology can facilitate knowledge sharing and improve the consistency of accounting practices across tourism firms, thereby enhancing the overall quality of financial reporting.

The results also contribute to the understanding of tourism-led economic growth and its implications for accounting practices. By highlighting the economic benefits of tourism, such as increased employment and income generation, the study reinforces the importance of accounting systems that can accurately measure and report these impacts. This is particularly relevant in developing countries, where tourism is often a key driver of economic development and poverty reduction (Abby & Geoffrey, 2006; Nugroho & Verikios, 2025). The integration of tourism accounting into national economic frameworks can therefore provide valuable insights for policymakers and support the design of effective development strategies.

Overall, the findings of this study demonstrate that tourism accounting is a multifaceted and dynamic field that requires a comprehensive and integrated approach. By combining qualitative and quantitative methods, the study provides a robust framework for understanding the development of tourism accounting and its implications for organizational performance, sustainability, and policy-making. The identified dimensions and relationships offer valuable insights for both researchers and practitioners, highlighting the need for continued innovation and collaboration in the field of tourism accounting.

One limitation of this study relates to the context-specific nature of the data, as the research was conducted within a particular economic and institutional environment, which may limit the generalizability of the findings to other contexts. Additionally, the reliance on expert interviews in the qualitative phase may introduce subjective biases, despite efforts to ensure reliability through Delphi analysis. The sample size in the quantitative phase, while consistent with methodological standards, may also limit the robustness of statistical generalizations. Furthermore, the complexity of the matrix-based analytical approach may pose challenges for replication in other studies.

Future research should focus on expanding the empirical scope of tourism accounting studies by incorporating cross-country comparisons and longitudinal analyses to better understand the evolution of accounting practices over time. Researchers are also encouraged to explore the integration of emerging technologies, such as artificial intelligence and

blockchain, into tourism accounting systems, as well as their implications for transparency and efficiency. Additionally, further studies could examine the relationship between tourism accounting and organizational performance using advanced quantitative methods to validate and extend the findings of the present study.

From a practical perspective, policymakers and industry practitioners should prioritize the development of standardized tourism accounting frameworks that incorporate both financial and non-financial indicators. Investment in technological infrastructure and professional training programs is essential to enhance the capacity of tourism firms to implement advanced accounting practices. Moreover, regulatory bodies should consider introducing guidelines and incentives to promote transparency and accountability in tourism reporting, thereby supporting sustainable development and improving stakeholder confidence in the industry.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were considered.

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