Identifying Innovation Drivers in Indonesia's Tourism Supply Chain: An Exploratory Factor Analysis

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Abstract. This study investigates the drivers of supply chain innovation capability within Indonesia's tourism industry, emphasizing strategic partnerships, process innovation, and responsiveness. Previous research highlights the importance of innovation in improving supply chain efficiency, yet there is a gap in understanding specific innovation drivers in developing economies like Indonesia. This study addresses the gap by exploring the drivers of supply chain innovation in Indonesia's tourism sector. The novelty lies in the detailed examination of strategic partnerships, process innovations, and responsiveness through exploratory factor analysis (EFA). Data were collected through a survey of 130 tourism professionals across various managerial levels in Indonesia. EFA was used to identify the underlying factors influencing supply chain innovation. The dataset's suitability for factor analysis was validated using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity. Results indicate that strategic partnerships enhance resource utilization and knowledge sharing, process innovations improve workflows and customer satisfaction, and responsiveness to market changes is crucial for competitiveness. These findings provide actionable insights for stakeholders to enhance innovation capabilities. This study underscores the necessity for continuous innovation and strategic adaptability to ensure Indonesia's tourism industry's sustainable development and competitiveness. The findings offer practical strategies for enhancing service delivery, operational efficiency, and responsiveness, supporting resilience and alignment with global sustainable tourism practices.

Keywords: Supply Chain Innovation Capability, Tourism Industry, Exploratory Factor Analysis, Tourism Supply Chain, Indonesia.

1 INTRODUCTION

The tourism industry plays a crucial role in Indonesia's economic landscape, with its vast archipelago offering a diverse array of attractions that draw both domestic and

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international visitors. According to the United Nations World Tourism Organization (UNWTO), international tourism has shown significant recovery post-pandemic, with international tourist arrivals reaching 87% of pre-pandemic levels in the first nine months of 2023. This resurgence highlights the critical importance of the tourism sector to the global economy and underscores the need for continuous innovation to maintain competitiveness.

In Indonesia, the tourism sector is a vital contributor to the national economy, accounting for approximately 5.7% of the GDP and providing employment to over 12 million people as of 2022 (BPS, 2022). The country's diverse attractions, ranging from cultural heritage sites and natural wonders to modern entertainment venues, make it a significant destination for tourists worldwide. However, the sector faces numerous challenges, including infrastructure limitations, environmental sustainability concerns, and intense competition from other Southeast Asian destinations.

As global markets continue to evolve rapidly, the need for innovation within tourism supply chains becomes increasingly critical to sustaining and enhancing operational capabilities (Hjalager, 2010). Innovation in supply chain management is crucial for addressing these challenges, improving service delivery, and meeting the rising expectations of tourists. Recent studies have emphasized the importance of innovation in improving the efficiency and effectiveness of these supply chains. For instance, innovations in digital technology, such as blockchain and IoT, have been shown to enhance transparency, efficiency, and responsiveness in supply chain operations (Zhang & Xu, 2022). Despite these advancements, there remains a gap in understanding the specific drivers of such innovation, particularly in developing economies like Indonesia.

This study aims to address this gap by exploring the drivers of supply chain innovation capability within Indonesia's tourism industry. Using exploratory factor analysis, the research investigates the roles of strategic partnerships, process innovation, and responsiveness in enhancing supply chain operations. Strategic partnerships are essential for resource sharing, knowledge transfer, and enhancing service delivery (Hashim & Murphy, 2021). Process innovation involves the implementation of new or significantly improved production or delivery methods, which can lead to increased operational efficiency and customer satisfaction (Gomez et al., 2019). Responsiveness, defined as the ability to quickly adapt to market changes and consumer demands, is critical for maintaining a competitive edge in the dynamic tourism market (Tse et al., 2021).

The hypothesis underpinning this study is that strategic collaborations, operational agility, and the ability to swiftly adapt to market changes are crucial for fostering innovation in this sector. By identifying and analysing these drivers, the research seeks to provide actionable insights that can help stakeholders in the tourism industry enhance their innovation capabilities. This, in turn, is expected to boost competitiveness and support the sustainable development of the tourism sector in Indonesia. The insights gained from this study will be valuable for policymakers, industry leaders, and academics who are working towards creating a more resilient and innovative tourism sector.

The rest of the paper is structured as follows: Section 2 presents a summary of the literature review, Section 3 describes the methodology used in the study, Section 4 presents the results of the analysis, and Sections 5 and 6 provide the discussion and conclusion, respectively.

2 LITERATURE REVIEW

Innovation is a source of performance improvements in the form of reducing manpower costs, improving service quality, or improving organizational flexibility (de Larrea et al., 2021). Supply chain innovation capabilities are defined as a service firm's ability to reconfigure and integrate IT/IS systems using certain techniques of continuous innovation to support daily business operations based on market demand (Fernando et al., 2018). The significance of innovation in the tourism supply chain is well-documented, with numerous studies highlighting its critical role in achieving competitive advantage and sustainability.

Recent research emphasizes that the drivers of supply chain innovation capabilities, such as strategic partnerships, process innovation, and responsiveness, are crucial for the success of the tourism industry. Strategic partnerships enable firms to leverage resources, share knowledge, and enhance service delivery, thereby improving overall performance and sustainability. Process innovation, which involves implementing new or significantly improved production or delivery methods, enhances operational efficiency and customer satisfaction. Responsiveness, the ability to quickly adapt to market changes and consumer demands, ensures that firms remain competitive in dynamic environments.

Strategic partnerships within the tourism industry are essential for leveraging resources, enhancing service delivery, and improving overall supply chain performance. Long-term strategic partnerships enable firms to build stable relationships that are crucial for achieving mutual goals and sustaining competitive advantages (Liao et al., 2017). These enduring relationships foster trust and collaboration, allowing partners to work together more effectively over time. Evaluating suppliers is another critical component of strategic partnerships, ensuring that reliable and capable suppliers are chosen to maintain high-quality service delivery (Singhry, 2015). As Nenavani and Jain (2022) highlighted, strong strategic supplier partnerships also enhance supply chain responsiveness, which is critical for adapting to sudden market changes and maintaining operational performance. Additionally, information exchange between partners enhances transparency and allows for better decision-making processes, which are key to optimizing supply chain performance (Fernando et al., 2018). When partners share relevant information efficiently, they can coordinate their actions more effectively, leading to smoother operations and improved responsiveness to market demands (Oh, 2019). This effective coordination, as Nilsson and Göransson (2021) emphasized, is a key factor in transitioning towards more sustainable and resilient supply chains. By integrating these aspects—long-term relationships, rigorous supplier evaluation, and robust information exchange—strategic partnerships become a foundation for enhancing innovation capabilities within the tourism supply chain.

Process innovation is critical for improving operational efficiency, customer satisfaction, and overall business performance in the tourism supply chain. Establishing

dedicated innovation teams within organizations is essential for driving continuous improvements and fostering a culture of creativity (Liao et al., 2017). These teams are responsible for identifying new opportunities and implementing innovative solutions that can lead to significant advancements in service delivery. Regularly revising supply chain processes is also crucial for keeping operations aligned with technological advancements and changing market conditions (Fernando et al., 2018). This ensures that the supply chain remains agile and capable of adapting to new challenges. Collaborative forecasting and planning with supply chain partners are necessary to anticipate future demand and make informed decisions that minimize disruptions and enhance overall supply chain resilience (Singhry, 2015). De Larrea et al. (2021) underscore the importance of innovation in the tourism sector, noting that process innovation is a key driver in achieving long-term sustainability and competitive advantage. By focusing on innovation teams, continuous process revision, and collaborative planning, process innovation becomes a key driver of supply chain performance and competitiveness in the tourism industry.

Responsiveness is a critical factor in maintaining a competitive edge in the rapidly changing tourism market. The ability to respond quickly to customer demands is increasingly important in a market where consumer preferences can shift rapidly (Oh, 2019). Agile processes enable firms to adapt swiftly to new market conditions, whether that involves reallocating resources, adjusting production schedules, or introducing new services (Fernando et al., 2018). The capability to launch new services quickly is particularly important in the tourism industry, where innovation can set a firm apart from its competitors and attract new customers (Yeniyurt et al., 2019). As Nenavani and Jain (2022) have noted, responsiveness is not only about speed but also about the ability to strategically align supply chain processes with market demands, ensuring that firms can meet consumer expectations efficiently. Furthermore, Nilsson and Göransson (2021) argue that responsiveness is a critical factor in the realization of sustainable supply chains, as it allows firms to quickly adapt to environmental changes and integrate sustainability into their operations. By focusing on these aspects—rapid response, agility in processes, and quick service introduction—firms can maintain their competitiveness, enhance customer loyalty, and ensure long-term success in the tourism industry.

The integration of strategic partnerships, process innovations, and responsiveness forms a complex framework that influences the innovative capabilities of tourism supply chains. The interplay between these factors is crucial for driving sustainable competitive advantages in a highly competitive and rapidly evolving industry like tourism. By focusing on these dimensions, this study aims to unravel the intricacies of innovation within the tourism supply chain in Indonesia, providing a foundation for strategic decision-making and policy formulation aimed at enhancing the resilience and competitiveness of the tourism sector. The following chapter outlines the methodology, including the use of exploratory factor analysis, designed to capture the nuanced effects of these drivers on supply chain innovation.

3 RESEARCH METHODOLOGY

3.1 Research Approach

The main objective of this study was to examine the impact of innovation capability on the tourism supply chains in Indonesia. To achieve this, a deductive research approach was primarily employed. As outlined in the literature review, supply chain innovation capabilities can be categorized into three main areas: (1) partnership, (2) process innovation, and (3) responsiveness. This study operationalizes these categories through specific measurement items, detailed in Table 1.

3.2 Operationalization

The constructs of supply chain innovation capabilities were measured using the following items:

1. Partnership (PS): Defined as a strategic collaboration involving long-term relationships, efficient supplier evaluation, and extensive information sharing aimed at mutual goals. The measurement items include: PS1 – Long Strategic Partnership (LongPart), PS2 – Supplier Evaluation (EvalSup), PS3 – Information Exchange (InfoExch), and PS4 – Coordination Efficiency (CoordEff).
2. Process Improvement (PI): Involves continuous improvement, innovative supply chain revisions, and active forecasting collaboration with partners. The measurement items include: PI1 – Innovation Team (InnTeam), PI2 – Supply Chain Process Revision (SCRevise), and PI3 – Collaboration Forecasting and Planning (CollabFP).
3. Responsiveness (RS): Entails quickly adapting to market demands, building agile processes, and rapidly introducing new services. The measurement items include: RS1 – Fast Response (FastResp), RS2 – Agile Process (AgilePrc), RS3 – Quick New Service (QuickNS).

Table 1 provides a summary of the constructs, descriptions, measurement items, and sources.

Table 1. Operationalization

Constructs	Description	Measurement items	Sources
Partnership (PS)	A partnership is a strategic collaboration with long-term relationships, efficient supplier evaluation, and extensive information sharing for mutual goals.	PS1 – Long Strategic Partnership (LongPart) PS2 – Supplier Evaluation (EvalSup) PS3 – Information Exchange (InfoExch)	Fernando, 2018; Liao, 2017; Iddris, 2016; Singhry, 2015; Wu, 2006; Yu, 2018; Yeniyurt, 2019; Nilsson & Goransson, 2021; Nenavani & Jain, 2022
Process Improvement (PI)	Process innovation involves continuous improvement, innovative supply chain revisions, and	PI1 – Inovation Team (InnTeam) PI2 – Supply Chain Process Revision (SCRevise)	Fernando, 2018; Yoon, 2016; Singhry, 2015; Liao, 2017; Wu, 2006;Yu, 2018;

	active forecasting collaboration with partners.	PI3 – Collaboration Forecasting and Planning (CollabFP)	Yeniyurt, 2019; de Larrea et al., 2021.
Responsiveness (RS)	Responsiveness involves quickly adapting to market demands, building agile processes, and rapidly introducing new services.	RS1 – Fast Response (FastResp) RS2 – Agile process (AgilePrc) RS3 – Quick new service (QuickNS)	Oh, 2019; Wu, 2006; Yu, 2018; Yeniyurt, 2019; Kwak, 2018; Singhry, 2015; Nenavani & Jain, 2022

According to the literature, the response level for each measurement item was captured on a five-point Likert scale, ranging from 1. Strongly Disagree, 2. Disagree, 3. Neutral, 4. Agree to 5. Strongly Agree (Chaudhuri et al., 2018).

3.3 Data Collection and Analysis

Data were gathered from professionals working within the tourism supply chain in Indonesia. These data were then analyzed using exploratory factor analysis (EFA), a statistical technique designed to condense a large set of interdependent variables into a smaller, more manageable set, while preserving most of the original informational value (Hair et al., 2019). This method was employed to uncover the underlying relationships among the variables and to validate the constructs, ensuring a robust analysis of the measurement items and their factor structure.

The analysis was performed using IBM SPSS Statistics 26, a statistical software package that facilitates comprehensive data analysis and interpretation. The suitability of the data for factor analysis was evaluated using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. These tests ensured that the sample was appropriate for factor analysis and that the data had sufficient correlations for identifying the underlying factor structure. By employing this methodology, the study aims to provide a thorough understanding of the impact of innovation capabilities on the efficiency and effectiveness of tourism supply chains in Indonesia. This understanding will enable stakeholders to enhance their strategic decision-making and policy formulation aimed at improving the resilience and competitiveness of the tourism sector.

4 RESULT / FINDING

The study surveyed 130 professionals from various managerial and executive levels in the Indonesian tourism supply chain. The participant group comprised Owners (13%), President Directors or Vice Presidents/Directors (6%), Directors/General Managers/CEOs (9%), Assistant Managers/Managers/Heads of Department (49%), and Senior Executives (23%). These respondents varied in job tenure, with 18% in their roles for less than a year, 23% for 1-2 years, 8% for 3-4 years, 27% for 5-10 years, and 24% for over 10 years. The demographic was predominantly male (68%), with 32% female, and

education levels ranged from secondary education (7%), diplomas (32%), bachelor's degrees (54%), to postgraduate degrees (7%). This diverse cross-section provided a broad spectrum of insights into innovation drivers within the tourism supply chain.

The analysis of the data collected provides insightful findings on the drivers of innovation capabilities. Using exploratory factor analysis, we identified key factors that significantly impact the efficiency and effectiveness of supply chain operations. The results highlight the roles of strategic partnerships, process innovations, and responsiveness in enhancing the innovative capabilities within the tourism sector. The following sections detail the statistical outcomes and interpretations of these findings, offering a comprehensive understanding of the elements that drive supply chain innovation in Indonesia's tourism industry.

Table 2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.886
Bartlett's Test of Sphericity	Approx. Chi-Square	516.454
	df	45
	Sig.	.000

The results of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity indicate that the dataset is suitable for factor analysis. The KMO value of 0.886 falls within the "meritorious" range, suggesting a high level of sampling adequacy and significant inter-correlations among the variables. Additionally, Bartlett's Test produced a Chi-Square value of 516.454 with 45 degrees of freedom and a p-value of 0.000, which is well below the 0.05 threshold, leading to the rejection of the null hypothesis and confirming that the correlation matrix is not an identity matrix. This significant result supports the presence of adequate correlations among the variables, making the dataset appropriate for further factor analysis to identify underlying factors.

Table 3. Communalities

	Initial	Extraction
LongPart_PS1	1.000	.756
EvalSup_PS2	1.000	.587
InfoExch-PS3	1.000	.584
CoordEff_PS4	1.000	.651
InnTeam_PI1	1.000	.628
SCRevise_PI2	1.000	.722
CollabFP_PI3	1.000	.681
FastResp_RS1	1.000	.711
AgilePrc_RS2	1.000	.724
QuickNS_RS3	1.000	.639

Extraction Method: Principal Component Analysis.

The communalities table derived from the Principal Component Analysis (PCA) reveals the proportion of each variable's variance explained by the extracted factors. Initially, the communalities are all set to 1.000, indicating that each variable's variance

is fully accounted for by itself before extraction (Hair, 2019). Post-extraction communalities show how much variance in each variable is explained by the common factors. For instance, "LongPart_PS1" has a communality of 0.756, meaning 75.6% of its variance is explained by the factors. Similarly, "EvalSup_PS2" and "InfoExch_PS3" have communalities of 0.587 and 0.584, respectively, indicating that about 58.7% and 58.4% of their variances are explained by the factors. "CoordEff_PS4" has a communality of 0.651, "InnTeam_PI1" is 0.628, "SCRevise_PI2" is 0.722, and "CollabFP_PI3" is 0.681, indicating substantial variance explanations of 65.1%, 62.8%, 72.2%, and 68.1%, respectively. Furthermore, "FastResp_RS1," "AgilePrc_RS2," and "QuickNS_RS3" have communalities of 0.711, 0.724, and 0.639, meaning 71.1%, 72.4%, and 63.9% of their variances are accounted for by the factors. These high communalities suggest that the extracted factors effectively capture the essence of the original variables, making them suitable for summarizing the data's underlying structure.

Table 4. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.878	48.779	48.779	4.878	48.779	48.779	2.412	24.118	24.118
2	1.034	10.338	59.117	1.034	10.338	59.117	2.187	21.868	45.985
3	.770	7.705	66.822	.770	7.705	66.822	2.084	20.837	66.822
4	.694	6.936	73.758						
5	.621	6.214	79.972						
6	.480	4.800	84.772						
7	.447	4.475	89.246						
8	.432	4.320	93.567						
9	.348	3.482	97.049						
10	.295	2.951	100.000						

Extraction Method: Principal Component Analysis.

The Total Variance Explained table from the Principal Component Analysis (PCA) summarizes the amount of variance each component captures from the dataset. Initially, the first component has an eigenvalue of 4.878, explaining 48.779% of the total variance, while the second component has an eigenvalue of 1.034, explaining an additional 10.338%, cumulatively accounting for 59.117% of the variance. The third component, with an eigenvalue of 0.770, adds another 7.705% to the cumulative variance, bringing it to 66.822%. When rotated, the loadings indicate a redistribution of variance, with the first three components capturing 24.118%, 21.868%, and 20.837% of the variance, respectively, totaling 66.822% after rotation. The remaining components each explain less than 10% of the variance individually and are not significant enough to contribute meaningfully to the overall explained variance. This suggests that the first three components are sufficient to describe the underlying structure of the dataset.

Table 5. Component Matrix

	Component		
	1	2	3
QuickNS_RS3	.780		
InnTeam_PI1	.756		
AgilePrc_RS2	.732		
LongPart_PS1	.693	.511	
InfoExch-PS3	.684		
CoordEff_PS4	.683		
FastResp_RS1	.673		-.506
CollabFP_PI3	.671		
SCRevise_PI2	.656		
EvalSup_PS2	.642		

Extraction Method: Principal Component Analysis.
a. 3 components extracted.

The Component Matrix from the Principal Component Analysis (PCA) displays the loadings of each variable on the three extracted components, revealing the strength and direction of each variable's association with the components. For the first component, "QuickNS_RS3" has the highest loading at 0.780, indicating a strong positive relationship. "InnTeam_PI1" and "AgilePrc_RS2" follow closely with loadings of 0.756 and 0.732, respectively, signifying substantial contributions to this component. "LongPart_PS1" also shows a notable loading of 0.693 on the first component and a secondary loading of 0.511 on the second component, suggesting it influences both components but more strongly than the first. "InfoExch-PS3," "CoordEff_PS4," and "FastResp_RS1" have loadings of 0.684, 0.683, and 0.673 respectively, with "FastResp_RS1" also showing a negative loading of -0.506 on the third component, indicating a mixed influence. "CollabFP_PI3" and "SCRevise_PI2" contribute similarly with loadings of 0.671 and 0.656 on the first component. Lastly, "EvalSup_PS2" has a loading of 0.642, primarily influencing the first component. These loadings suggest that the first component captures a significant portion of the variance across most variables, while the second and third components capture more specific aspects, making the three-component solution effective in explaining the dataset's structure.

Table 6. Rotated Component Matrix

	Component		
	1	2	3
LongPart_PS1	.826		
EvalSup_PS2	.696		
InfoExch-PS3	.636		
CoordEff_PS4	.636		
SCRevise_PI2		.814	
CollabFP_PI3		.768	
InnTeam_PI1		.604	
FastResp_RS1			.799
AgilePrc_RS2			.728
QuickNS_RS3			.564

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

The Rotated Component Matrix using Varimax with Kaiser Normalization provides a clearer interpretation of how variables load onto each of the three components extracted in the Principal Component Analysis (PCA). After rotation, the first component is primarily defined by "LongPart_PS1" with a high loading of 0.826, indicating a strong association, followed by "EvalSup_PS2" (0.696), "InfoExch-PS3" (0.636), and "CoordEff_PS4" (0.636), which also show substantial contributions to this component. The second component is dominated by "SCRevise_PI2" with a loading of 0.814, "CollabFP_PI3" (0.768), and "InnTeam_PI1" (0.604), highlighting their significant roles in this component. The third component is characterized by "FastResp_RS1" with a loading of 0.799, "AgilePrc_RS2" (0.728), and "QuickNS_RS3" (0.564), indicating these variables are strongly associated with the third component. The rotation method has effectively redistributed the variance, making it easier to interpret the structure of the dataset by showing more distinct groupings of variables under each component. This helps in understanding the underlying dimensions of the data, where each component now represents a more specific and interpretable aspect of the supply chain innovation capabilities.

Table 7. Component Transformation Matrix

Component	1	2	3
1	.606	.559	.565
2	.707	-.704	-.061
3	.364	.437	-.823

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The Component Transformation Matrix reveals the coefficients used to rotate the initial components into their final positions during the Varimax rotation, which aids in clarifying the underlying structure of the dataset. For Component 1, the coefficients are 0.606, 0.559, and 0.565 for the first, second, and third initial components, respectively, indicating a balanced combination of all three initial components in the first rotated component. Component 2 has coefficients of 0.707, -0.704, and -0.061, showing it is primarily a contrast between the first and second initial components with minimal influence from the third. Component 3, with coefficients of 0.364, 0.437, and -0.823, is heavily influenced by the third initial component, with moderate contributions from the first and second. This matrix elucidates how the final rotated components are derived, reflecting the relationships and dependencies among the original components. The transformation matrix thus provides a clearer interpretation of the data by showing how each rotated component is constructed from the initial components, enhancing the understanding of the underlying factors in the dataset.

5 DISCUSSION

The results of this study shed light on the crucial drivers of innovation within the tourism supply chain, emphasizing the importance of strategic partnerships, process innovation, and responsiveness as key factors that enhance operational efficiency and competitiveness in Indonesia's tourism sector. The exploratory factor analysis identified these drivers as fundamental to fostering a more resilient and adaptive supply chain, capable of meeting the demands of a rapidly changing market environment.

The data analysis underscores the significant impact of strategic partnerships on supply chain innovation. The ability to forge and maintain long-term partnerships with reliable suppliers is essential for ensuring consistent service delivery and enhancing overall supply chain performance. The findings align with Nenavani and Jain (2022), who highlighted those strategic partnerships, particularly those that involve effective information exchange and supplier evaluation, are critical for improving supply chain responsiveness and operational adaptability. This insight is particularly relevant in the context of Indonesia's tourism industry, where collaboration among stakeholders is necessary to overcome infrastructure challenges and improve service quality. The robust correlation between strategic partnerships and innovation capabilities suggests that fostering strong, cooperative relationships is indispensable for driving sustainable growth in the tourism sector.

Process innovation emerged as another critical driver, with the data revealing its substantial contribution to improving operational efficiency and customer satisfaction. The study's findings are consistent with de Larrea et al. (2021), who emphasized that technological advancements such as blockchain and IoT are pivotal in revolutionizing traditional processes, leading to greater transparency, efficiency, and flexibility in supply chain operations. The positive loadings of innovation-related factors in the analysis highlight the importance of continuous process improvements and the integration of new technologies in maintaining a competitive edge. This is particularly crucial in Indonesia's diverse and geographically dispersed tourism landscape, where efficient and innovative supply chain processes can significantly enhance the ability to deliver high-quality services.

Responsiveness, as identified in the factor analysis, plays a vital role in ensuring that tourism supply chains can swiftly adapt to market changes and consumer demands. The study supports the findings of Tse et al. (2021), who pointed out that high responsiveness is closely linked to increased innovation and better alignment with market needs. The ability to quickly introduce new services and adjust operations in response to market fluctuations is critical in a sector as dynamic as tourism. The data further indicates that responsiveness is not merely about speed but also about strategic agility—an ability to anticipate and respond to market shifts proactively. This is supported by Oh (2019), who noted that IT systems enhance a firm's responsiveness by enabling real-time decision-making and process adjustments. The findings suggest that enhancing

responsiveness through strategic agility and technological integration is essential for sustaining competitive advantage in Indonesia's tourism industry.

6 CONCLUSION AND RECOMMENDATION

This study underscores the pivotal role of strategic partnerships, process innovations, and responsiveness in driving supply chain innovation within Indonesia's tourism sector. Strategic partnerships enhance resource utilization and service delivery, aligning with global research that emphasizes their benefits for efficient distribution and sustainable practices. Process innovations, particularly those driven by advanced technologies like blockchain and IoT, significantly improve operational efficiency and customer satisfaction. Responsiveness to market changes and customer feedback is crucial for maintaining a competitive edge, enabling swift adaptation and the introduction of new services.

The originality of this research lies in its specific focus on the drivers of supply chain innovation within the context of a developing economy, specifically Indonesia. Previous studies have broadly covered innovation in tourism supply chains, but this study uniquely combines the elements of strategic partnerships, process innovations, and responsiveness to provide a comprehensive analysis of their collective impact. The application of exploratory factor analysis (EFA) to identify and validate these drivers within Indonesia's tourism sector further enhances the originality of this research.

The findings of this study have significant practical implications for stakeholders in the tourism industry. By focusing on strategic partnerships, tourism businesses can leverage shared resources and knowledge to enhance service delivery and operational efficiency. Process innovations, particularly those integrating advanced technologies, can streamline operations, reduce costs, and improve customer satisfaction. Additionally, developing a responsive supply chain that can quickly adapt to market changes and customer feedback is essential for maintaining competitiveness. Policymakers and industry leaders can use these insights to formulate strategies that foster continuous innovation and strategic adaptability, ensuring the sustainable development and resilience of Indonesia's tourism sector. These actions will not only boost the sector's competitiveness but also align it with global trends in sustainable tourism practices.

By concentrating on these key drivers, stakeholders can enhance the sector's resilience and align with global trends in sustainable tourism practices, ensuring long-term growth and sustainability in Indonesia's tourism industry. Future research should explore the integration of technologies like blockchain, IoT, AI, and machine learning to enhance process innovations in tourism supply chains. Longitudinal studies on strategic partnerships can examine their long-term impacts on resource utilization and sustainability. Additionally, examining the role of real-time customer feedback in driving responsiveness and innovation can enhance service improvement and customer loyalty, supporting sustainable development and competitiveness in the tourism industry.

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