

Understanding Research Trends on Supply Chain Innovation in Tourism: Insights from a Bibliometric Study

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ABSTRACT

Purpose – This study investigates how innovation in tourism supply chains has evolved over the past two decades, particularly in response to growing sustainability demands, digital transformation, and global disruptions such as the COVID-19 pandemic. The goal is to map the current state of research and identify gaps that could inform future work.

Design/methods/approach – A bibliometric analysis was conducted on 43 selected articles published between 2003 and 2023, sourced from the Scopus database. The study utilized R Biblioshiny to explore publication trends, author collaboration, country contributions, and emerging research themes within the field of tourism supply chain innovation.

Findings – The results show that research on this topic remained relatively limited until a noticeable increase after 2018. Countries such as Indonesia and France emerged as key contributors. Recurring themes included environmental sustainability, technology adoption, and inter-organizational collaboration. More recent studies have begun to connect these themes, suggesting a shift toward more integrated approaches to innovation in tourism supply chains.

Research implications/limitations – The analysis focuses only on English-language articles indexed in Scopus, which may limit the generalizability of findings. However, the study offers a structured overview that helps clarify how this area of research has developed. It also highlights opportunities for future inquiry, especially in underrepresented regions and in more practical, field-based studies.

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Introduction

Tourism operates differently from most industries. While factories produce standardized goods through predictable processes, tourism creates experiences that depend on local culture, weather, and countless human interactions. The supply chain here is not a neat line from producer to consumer. Instead, it is more like a web involving hotels, restaurants, tour guides, transport companies, and government offices, each working somewhat independently (Liao et al., 2017). Getting all these pieces to work together smoothly becomes especially tricky in places where tourism drives much of the local economy.

Supply chain innovation caught researchers' attention around twenty years ago as they looked for ways to improve tourism operations. The idea borrowed heavily from manufacturing concepts like efficiency, coordination, and quick problem-solving response. However, tourism threw some curveballs, making direct application difficult (Afraz et al., 2021). COVID-19 drove this point home when entire tourism systems collapsed almost overnight. Suddenly, businesses realized their old ways of connecting with partners and customers needed serious rethinking. Terms like "agility" and "value creation" started showing up in tourism conferences and journals, even though they originally came from factory management (Storer, 2009).

One thing keeps coming up in tourism research: businesses do better when they work together. This sounds obvious, but making it happen requires trust, shared goals, and willingness to solve problems as a team rather than competing constantly (Liao et al., 2014; Singhry, 2015). Small tourism operators especially benefit from these partnerships since they cannot afford big marketing budgets or technology upgrades. They need connections with suppliers, local officials, and other businesses to survive (Yoon et al., 2016). Nevertheless, building these relationships takes time and effort. Many attempts at collaboration fail because people want different things or do not communicate well enough.

Environmental concerns have pushed their way into tourism supply chain discussions, too. Destinations that get loved to death by too many visitors face real problems. Local communities sometimes get pushed out by rising costs. Natural attractions suffer from overuse (Yuan et al., 2019). Smart businesses started looking for ways to reduce their environmental impact while making money. Some innovations focus on waste reduction, others on supporting local suppliers, and others on creating jobs for residents rather than importing everything from elsewhere. The problem is that most research studies only look at one piece of this puzzle. Someone might write about sustainability without mentioning supply chains or discuss innovation without considering environmental effects. This makes it hard to see the bigger picture (de Larrea et al., 2021).

Our study tackles this fragmentation by mapping what researchers wrote about tourism supply chain innovation over the past twenty years. We pulled articles from Scopus covering 2003 to 2023, then used bibliometric tools to spot patterns in topics, authorship, and institutional connections. Rather than just summarizing what others found, we want to identify where the field still has gaps and what directions might be worth pursuing next. Tourism supply chains are complicated enough without academic research being scattered everywhere.

Literature Review

Over the years, supply chain innovation (SCI) has become increasingly relevant in tourism, especially as industry adapts to technological change, global disruptions, and the push for sustainability. Early research tended to draw heavily from manufacturing-based supply chain models, but more recent studies acknowledge that tourism supply chains are unique in their structure and behavior. These networks are largely service-oriented, fragmented, and highly dependent on collaboration among actors who may have different goals and resources (Liao

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One prominent theme across literature is the importance of collaboration in enabling innovation, rather than being solely driven by technological advancements. Relational dynamics frequently shape innovation in tourism supply chains. Studies highlight that partnerships, mutual trust, and knowledge exchange among stakeholders often play a decisive role in fostering innovation outcomes (Singhry, 2015; Yoon, 2016; Nenavani et al., 2022). These collaborative mechanisms are particularly vital for small and medium-sized enterprises (SMEs), which often face resource constraints and internal capacity for innovation.

Environmental sustainability also appears often, though not always with the same level of clarity. Many articles highlight the importance of going green, but few explain how it works. Some touch on the involvement of local communities or eco-certification, while others take a more conceptual approach (Storer, 2009; Yuan et al., 2019). The topic is interesting, but the evidence base still seems scattered.

Digital innovation is another area that draws attention. From big data to mobile platforms, researchers have explored the potential these tools have to improve efficiency and visibility in tourism supply chains (Tan et al., 2015). Even so, adoption does not happen evenly. A few studies suggest that readiness, cost, and organizational culture can all be barriers, especially in regions with less technological infrastructure (Afraz et al., 2021). Others look more closely at the benefits, but do not always cover the challenges.

Most studies' methodology is still grounded in surveys and quantitative models. There have been calls for more diverse methods, like case studies or mixed approaches, to capture firms' nuanced, real-world challenges better when trying to innovate (de Larrea et al., 2021). This is especially relevant in tourism, where cultural, social, and geographic factors play a big role in shaping how the supply chain functions.

All in all, the literature on SCI in tourism is growing, but not yet cohesive. Key themes like collaboration, sustainability, and technology show up often, but they are not always connected across studies (de Larrea et al., 2021). Work must continue to link these themes meaningfully and bring in underrepresented contexts and voices. That is where future research can add the most value, by digging deeper into what innovation looks like across different parts of the tourism ecosystem.

Methods

This study employed bibliometric analysis to gain a structured understanding of how supply chain innovation (SCI) in tourism has evolved. This method allows researchers to explore trends, map influential authors, and identify thematic clusters by analyzing patterns in scientific publications. It is particularly useful for synthesizing large bodies of literature, especially when studies are dispersed across different topics and disciplines.

In this case, the analysis focused on publications related to SCI in the tourism sector, using Scopus as the primary database due to its broad coverage and academic credibility. A series of inclusion criteria was applied to refine the dataset, ensuring that only relevant and high-quality articles were analyzed. The final data were processed using Biblioshiny, an R-based tool that supports comprehensive bibliometric visualization and interpretation.

The methodological process consists of five structured steps as summarized in Table 1.

Table 1 Bibliometric Analysis Procedure

Step	Description
Step 1: Scope of Investigation	A bibliometric analysis of tourism supply chain innovation research from 2000 to 2023
Step 2: Database Selection	Scopus
Step 3: Document Selection	<p>First filter: Search based on TITLE-ABS-KEY using keywords “supply chain”, “innovation”, and “tourism” → 115 documents</p> <p>Second filter: Time interval limited to 2003–2023 → 115 documents</p> <p>Third filter: Subject areas restricted to Business, Management and Accounting; Social Sciences; and Economics, Econometrics and Finance → 72 documents</p> <p>Fourth filter: Document type limited to “Research Article” → 45 documents</p> <p>Fifth filter: Language restricted to “English” → 43 documents</p>
Step 4: Data Processing	Use of RStudio’s Biblioshiny interface to analyze bibliometric indicators and perform thematic mapping
Step 5: Analysis and Inference	Interpretation of publication trends, authorship patterns, source impact, and thematic clusters

The initial search was conducted in the Scopus database, given its wide coverage of high-quality, peer-reviewed publications and its compatibility with bibliometric tools. The keyword strategy targeted records that included “supply chain,” “innovation,” and “tourism” in their titles, abstracts, or keywords. This yielded an initial dataset of 115 documents.

Several filtering criteria were applied to refine the dataset for relevance and quality. The time frame was set from 2003 to 2023 to capture the most relevant developments over the past two decades. Documents were further filtered to include only those categorized under Business, Management and Accounting, Social Sciences, and Economics-related fields, resulting in 72 documents. The document type was limited to peer-reviewed research articles to ensure academic rigor and consistency. Lastly, only English-language publications were retained, yielding a final dataset of 43 articles.

The selected documents were processed using Biblioshiny, a graphical web interface of the Bibliometrix package in RStudio (Aria & Cuccurullo, 2017). This tool allows for multi-dimensional bibliometric analysis, including descriptive statistics, source impact analysis, authorship patterns, keyword co-occurrence, and thematic evolution mapping.

This process provides a quantitative and qualitative lens into how tourism SCI research has evolved over time, which areas have received the most scholarly attention, and where potential gaps remain for future exploration.

Results And Discussion

Descriptive Overview of the Dataset

The final dataset comprised 43 peer-reviewed research articles published between 2003 and 2023, all retrieved from the Scopus database using strict keyword, thematic, and document-type filters. These articles represent scholarly efforts to examine the intersection of supply chain management, innovation, and the tourism sector across diverse contexts and regions.

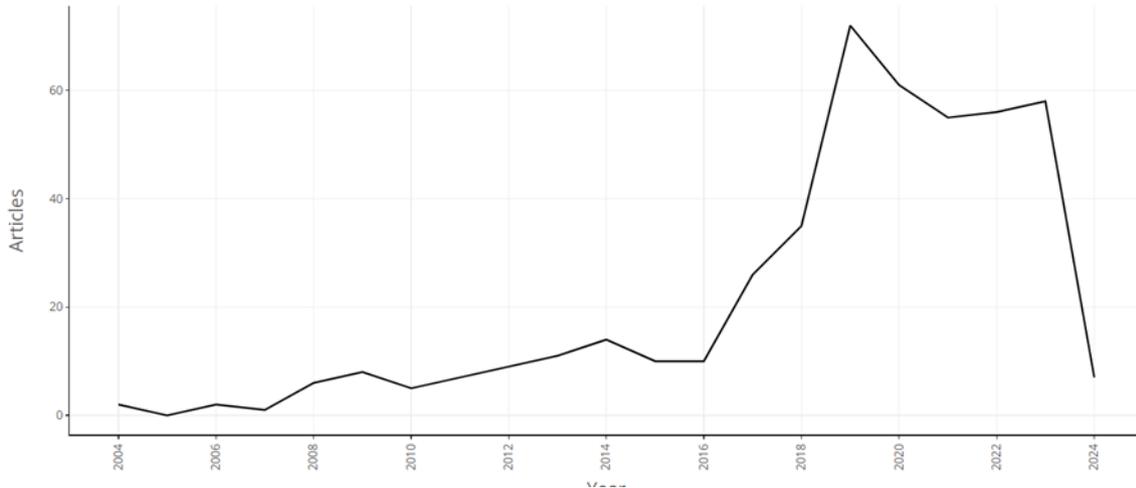


Figure 1: Annual Scientific Production

As illustrated in Figure 1, the annual scientific production demonstrates a steady upward trend, with most publications occurring after 2015. This growth aligns with broader developments such as digital transformation in tourism, increasing awareness of sustainable supply chains, and renewed attention to resilience following global disruptions such as the COVID-19 pandemic.

Table 2: Most Relevant Sources

No.	Journal Title	Number of Articles
1	International Journal of Supply Chain Management	5
2	Uncertain Supply Chain Management	4
3	Sustainability (Switzerland)	3
4	Information Technology and Tourism	2
5	African Journal of Hospitality, Tourism and Leisure	2
6	Asia Pacific Journal of Tourism Research	1
7	Current Issues in Tourism	1
8	International Journal of Contemporary Hospitality Management	1
9	Journal of Cleaner Production	1
10	Journal of Tourism Management Research	1

The articles were published in a wide range of journals, reflecting the multidisciplinary nature of the topic. As presented in Table 2, the most prolific sources are the International Journal of Supply Chain Management (5 articles), Uncertain Supply Chain Management (4 articles), and Sustainability (Switzerland) (3 articles). Other journals, such as Information Technology and Tourism and the African Journal of Hospitality, Tourism and Leisure, contributed two articles.

This dispersion highlights the absence of a single dominant journal in the field, indicating that research on supply chain innovation in tourism is still emerging and spread across various academic disciplines. The prominence of journals focusing on uncertainty, sustainability, and

digital systems suggests that these themes are central to how SCI is conceptualized and applied in tourism contexts.

Source and Authorship Analysis

Authorship patterns in the dataset reflect the overall fragmentation of the field. Most authors contributed to only one article, suggesting that research on supply chain innovation (SCI) in tourism is often pursued as a complementary topic rather than a core focus. Instead, it seems to be something they explore occasionally, often as part of a broader interest in tourism, logistics, or sustainability.

There are exceptions, however. One author, Jamaludin M., shows up twice, making him the most active contributor in the set. It is not a large number, but it stands out in a field as scattered as this one. Some researchers may build a more dedicated line of inquiry, even if the majority still come and go (Sunarya et al., 2023).

Collaboration among authors is there, but modest. Most papers are co-authored by two or three people, often from the same institution or country. There were not many signs of large research teams or international co-authorships. That makes sense, considering tourism research often relies on local data and case studies. But it also points to a missed opportunity: more cross-border collaboration could bring richer insights and broader applicability.

Overall, the authorship data reflect a field that’s still finding its footing. The interest is there, but a more connected and sustained effort among scholars might help this area grow into a more cohesive research community.

Citation and Impact Analysis

Citation data provides insight into which articles have had the strongest impact within the field. While not always a definitive quality measure, citation frequency can reflect how influential or widely used a study has become. In tourism supply chain innovation, tracking citation trends helps identify foundational works that researchers continue to build on.

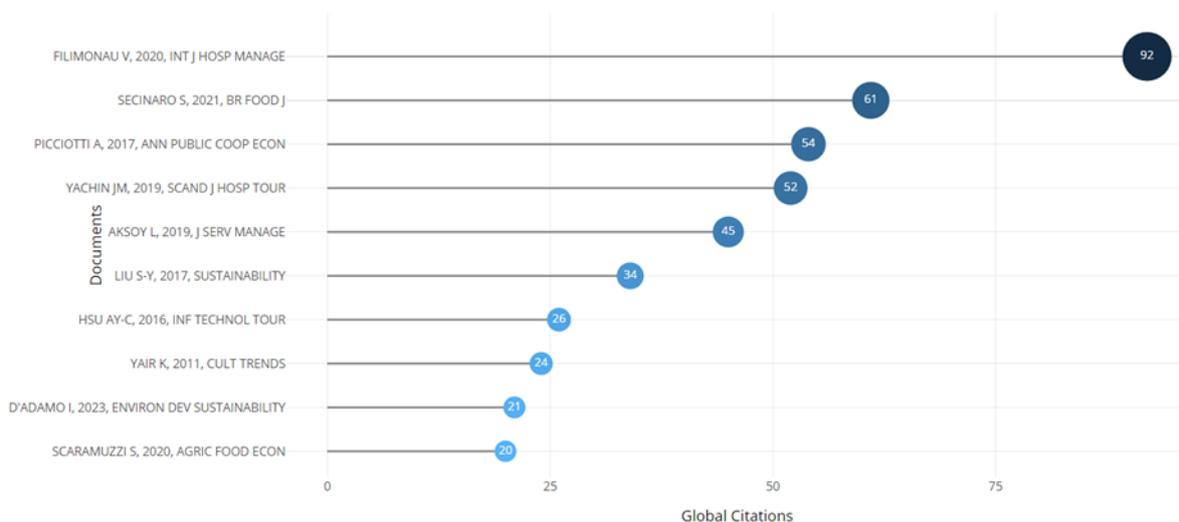


Figure 2: Ten Most Cited Documents

Figure 2 presents the ten most cited documents in the dataset, highlighting the studies that have received the most scholarly attention. Among these, the paper by Liao et al. (2014) received the highest citation count, focusing on how supply chain collaboration and capability affect firm performance. This work is often referenced in works that attempt to connect operational dynamics with business outcomes. Another frequently cited article by Kwak et al. (2018) discusses the relationship between innovation, risk management, and competitive

advantage, which remain highly relevant, especially in uncertain environments like tourism. Although older, Storer's (2009) contribution still maintains relevance by discussing innovation through dynamic capabilities, which continues to influence conceptual discussions.

Interestingly, several most cited papers are not exclusively about tourism but explore broader supply chain and innovation concepts. This reflects how tourism scholars often draw from other domains to construct their frameworks. It also suggests a potential gap: the field could benefit from more conceptual models and empirical studies tailored specifically to tourism supply chains.

Keyword Trends

When looking across a set of articles, keywords can tell us much about what researchers are paying attention to. They do not just point to recurring terms; they hint at how a field is being shaped, where the interest lies, and what topics might be gaining ground. In the case of tourism supply chain innovation, keyword analysis helps surface both the expected themes and a few surprising ones.



Figure 3 Word Cloud

Figure 3 shows a word cloud generated from the most used keywords in the dataset. The bigger the word, the more often it appears in articles. Unsurprisingly, supply chain, innovation, and tourism take centre stage. These are the core concepts. However, we see keywords like sustainability, performance, and collaboration around them. These suggest that the field is focused on change and efficiency and on how innovation ties into broader goals like environmental responsibility and working across organizations. Some newer terms also appear, such as COVID-19, resilience, and digitalization, which likely reflect more recent challenges and shifts in focus.

This distribution suggests that while the central ideas have remained fairly consistent, the context around them is evolving. Researchers are paying more attention to risk, disruption, and technology, signs that the field is reacting to global changes while staying grounded in its main priorities.



Figure 4: Tree Map

Figure 4, which presents a treemap of the most used terms, also shows the distribution of keyword frequency. Unsurprisingly, tourism (8 mentions), supply chain management (7), and innovation (6) appear most frequently. These three form the core of the field's vocabulary, pointing to the sectoral focus and functional emphasis. Supply chain (5) and COVID-19 (3) are slightly behind them, the latter likely reflecting the surge in publications around crisis response and resilience.

What makes the treemap particularly interesting is the range of secondary terms. Words like food industry, Taiwan, sustainability, and agricultural economics point to more context-specific or emerging areas of interest. While the main themes remain consistent, there is growing curiosity about how SCI intersects with local systems, environmental regulation, and sectoral shifts, especially in regions where tourism and agriculture are tightly linked.

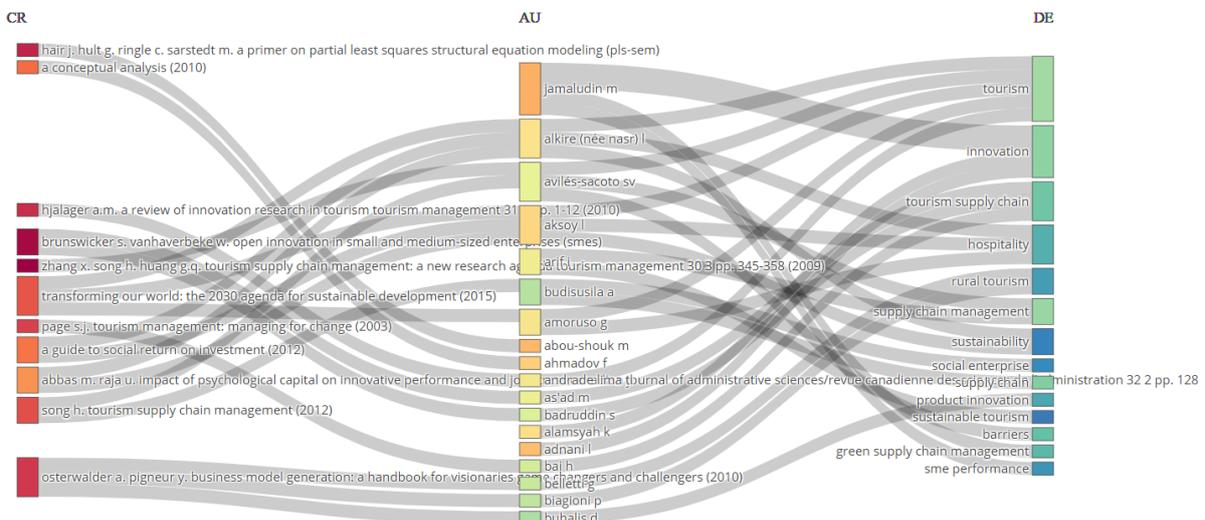


Figure 5: The Three-Field Plot

To explore how keywords connect to authorship and citation, Figure 5 offers a Three-Field Plot, showing the relationships between cited references (CR), authors (AU), and keyword descriptors (DE). While some themes remain consistent, the range of keywords also shows how diverse the interests in this field have become. Terms like sustainability, green supply chain, and SME performance show up in different articles, often used by different authors who do not seem to be referencing each other. There is an overlap in the topics, but not necessarily in how they are framed or which sources they draw from.

This suggests that while researchers circulate similar ideas, they are not always building on a shared foundation. It is as if the conversation is happening in several rooms at once, related, but not quite connected. That makes it harder to identify common models or core

references in the field.

In general, the keyword patterns confirm what earlier sections hinted: this field is growing, but still in the process of defining itself. Central topics are well-established, but many others, like innovation policy, health resilience, and regional development, are still being explored from different angles. As discussed next, these loose ends give a sense of where future research might go and why a closer look at thematic clusters is important.

Thematic Map and Conceptual Structure

To get a clearer sense of how research in this area is structured, a thematic map was generated using Biblioshiny (see Figure 6). This visual categorizes recurring themes into four areas: motor themes, basic themes, niche themes, and emerging or declining themes. Each quadrant tells us something different about how central and developed a theme is.

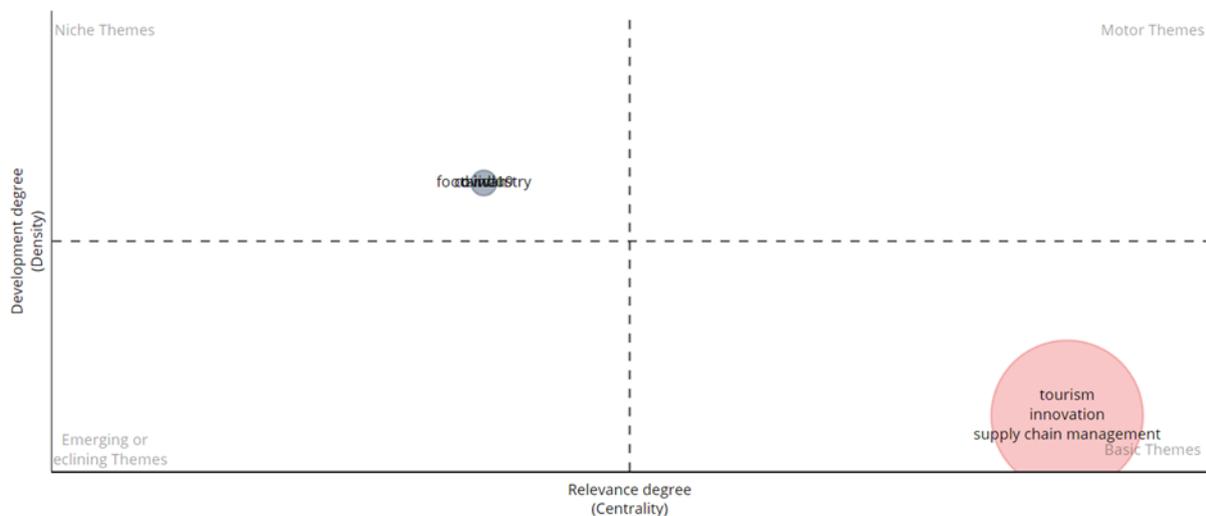


Figure 6: Thematic Map

The motor themes, which are important and well-developed, include familiar topics like sustainability, tourism, and supply chain management. These have become foundational in the field, appearing regularly and connecting across different studies.

Themes like innovation, SMEs, and strategy also appeared on the map. While these topics are widely used across literature, they often seem to function more as general reference points than as deeply investigated subjects. They are important, but the discussions around them tend to remain broad, with limited connection to specific frameworks or shared lines of inquiry.

Other topics, such as green supply chain practices and the hospitality sector, fell into the niche category. These areas show more focused development but are still operating somewhat on the sidelines of the mainstream discourse. Their presence suggests growing attention, yet they have not fully influenced the wider conversations. In contrast, themes like digital transformation and public health-related topics emerged more recently, likely in response to the COVID-19 pandemic. However, whether these interests will continue or fade over time is still uncertain.

Somewhat under the radar, themes like responsiveness, inter-firm collaboration, and process innovation are beginning to take shape. They are not yet dominant, but there is movement. For example, research by Irawan et al. (2024) shows how responsive practices and strategic collaboration are already shaping innovation efforts in Indonesia's tourism sector. This evidence points to a reality not always reflected in bibliometric patterns. Some ideas may be listed as "emerging" in the data but are already central to how innovation plays out in practice, especially in developing country contexts where tourism supply chains often face greater operational challenges.

Country and Institutional Collaboration

Sometimes, where the research comes from can be just as telling as what it says. In this case, the list of countries and institutions contributing to tourism supply chain innovation reveals a pattern that's not entirely expected.

Table 5 shows that Indonesia has the most publications on the topic in this dataset, followed by China and Taiwan. These results might reflect the growing attention to tourism and logistics in parts of Asia, especially where these industries are key to national development. Indonesia's strong showing may also be linked to its efforts to modernize tourism management and strengthen academic research.

When looking more closely at institutions, a similar trend appears. One university, Universitas Gadjah Mada, keeps coming up again and again. A few others in Taiwan and China also show strong activity, but many of the institutions listed work largely within their academic networks. This group of papers contains a few examples of international co-authorship or cross-country collaboration.

That is interesting, especially considering how international the tourism industry itself is. You would expect more work to be done across borders, but the data suggests otherwise. It could indicate that these topics develop locally before they scale up to global cooperation.

The current picture shows strong national activity but limited international integration. As the field matures, it might benefit from more projects that bring together scholars from different countries, especially those facing similar challenges in tourism supply chain design.

Future Research Agenda

Looking at the findings of this bibliometric analysis, it is clear that research on supply chain innovation (SCI) in tourism is growing, but still uneven. Some areas, like sustainability and digital tools, have received significant attention, but others remain relatively untouched. This section outlines a few directions that could be helpful for future work in the field.

First, sustainability is often mentioned, but not always deeply explored. Many papers touch on green innovation or local supplier networks, but there is room for more grounded studies, especially in less developed tourism regions. Case studies or longitudinal research could reveal how SCI supports environmental and community outcomes beyond efficiency gains.

Second, the role of digital innovation needs more attention. Technologies like blockchain or big data are regularly cited as future trends (Filimonau & Naumova, 2020), but how they are used in practice, especially by smaller tourism actors, is poorly understood. Future studies might explore adoption barriers, cost-benefit realities, or how tech shapes relationships between firms in the supply chain.

Third, collaboration has come up repeatedly, yet the social side of innovation, trust, shared goals, and leadership seems under-researched. Small firms may face constraints that are hard to capture through survey data alone. There is value in qualitative work that dives into how partnerships are built and maintained in different tourism contexts.

Lastly, more geographically diverse studies are needed. Much of the current literature is focused on Asia and Europe, while regions like Africa or Latin America are less visible. Broader inclusion of these settings could help test whether the theories and findings we currently rely on really hold up in different environments.

Conclusion

This study explored how tourism supply chain innovation (SCI) has developed over the last two decades. Applying bibliometric analysis to a selection of articles from the Scopus database

provided a clearer picture of the field's development, its major contributors, and which themes continue to shape current discussions.

The results show that research remains somewhat scattered while interest in SCI grows. Certain topics like sustainability, digitalization, and collaboration are consistently visible, but many studies approach them from different angles without much integration. Countries like Indonesia, France, and Thailand have emerged as key contributors, though cross-border collaboration remains limited. Institutional contributions are also quite spread out, suggesting that the field could benefit from stronger networks and shared research agendas.

Looking ahead, there is still much to explore. Gaps in geographic coverage, underdeveloped connections between technology and human factors, and limited qualitative insights all point to opportunities for future research. By mapping what has already been done, this paper hopes to support a more connected and cumulative conversation around SCI in tourism, which is practically useful and theoretically rich.

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