The interrelations among tourism industry, social media, and technological innovation: A systematic review approach

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ABSTRACT

Technological approach affecting on tourism industry development is uncertainties from era to era. This study examines the impact of social media and technological innovation on tourism outcomes through a systematic review. Data were collected from three databases: EBSCO (1984-2019), Scopus (2005–2021), and Web of Science (2009-2020), using keywords such as technology innovation, digitalization, social media, and enhancing tourism industry outcomes. Quality assessment was performed using SPSS and Cohen's Kappa statistics by two reviewers. Out of 156 articles initially screened, nine qualitative studies were included after further review. The findings indicate that social media platforms have the most significant impact on the development of the tourism industry. However, the study has limitations, including not exploring the impact of blockchain technology adoption. The concept of tourism has evolved into smart tourism, influencing tourist behavior through digital marketing, creative digital solutions, and digital payments. This has modernized and enhanced the tourism industry, requiring further efforts to meet tourist demands and expectations. Technologies like AI, IoT, VR, and AR are key factors in improving the tourism industry. To boost competitiveness and sustainable performance, stakeholders, governments, and tourism practitioners need to collaborate on developing strategies and technological innovations.

1. INTRODUCTION

Every aspect of our lives has been affected by social media, including how we use it daily or weekly (Zafar et al., 2021). Dwivedi et al. (2021) defined that social media development has been integrated with driven-technological innovation, which has impacted businesses significantly through adopting new marketing strategies. As a result, technology adoption has become more prevalent in most businesses worldwide during the last two decades, especially in the tourism industry (Park et al., 2016; Wijaya & Susilo, 2021). Badawy (2009) and Santoso et al. (2021) argued that social media and ICT make the industry more integrated and connected globally, which has been an important area for economic growth. Data showed the number of arrivals of international tourism was massively increasing from

1995 (1.02 billion) to 2019 (2.28 billion) over 122% worldwide and increased global GDP from 9.9% in 1995 to 10.3% in 2019 (Škare et al., 2021). However, Ghaderi et al. (2018) and Rashid et al. (2021) emphasized that social media and ICT positively impact tourism performance that supports facilities and services.

According to Lahath et al. (2021), global social media usage has increased from 3.4 billion, 3.6 billion, and 3.7 billion people from 2019 to 2021, respectively, and will be predicted to be over 4.41 billion in 2025. The number is also predicted to rise as the established digital market catches up with other regions regarding infrastructure development and low-cost mobile device availability (Pencarelli, 2020). Hence, social media is one of the most popular digital activities globally, so it is no surprise that its use is growing in all regions (Dwivedi et al., 2021; Ranganai et al., 2023). Furthermore, social media has become an inextricable element of ordinary internet users' lives (Nugroho et al., 2022). Neuhofer et al. (2012) argued that people need to travel more rapidly, securely, and effectively, which is part of social media and ICT solutions. Likewise, governments and tourism destination practitioners are encouraged to explore the facilities to enhance business planning and the tourist experience (Oktavio et al, 2024).

Pencarelli (2020) found that tourism stakeholders may generate, store, and retrieve large amounts of data for various purposes using technology innovations such as the IoT, IoS, mobile apps, location-based services, geo-tagging services, and AI, VR, AR, and other smart gadgets. However, the integration of tourism, social media, and technological innovation has beneficial impacts on tourists, industry, and destinations (Neuhofer et al., 2012). To elaborate the recent issues on social media and technology innovation in tourism industry, this research presents a rigor method of systematic review using Preferred Reporting Elements for Systematic Review and Meta-Analyzes (PRISMA) criteria (Moher et al., 2009; Pahlevan-Sharif et al., 2019) to extract the valuable insight from former studies.

Thus, this research objective is to provide a comprehensive systematic study on the impact of social media and technological innovation on the tourism industry screened literature by searching for research trends, regions, theories, study designs, methodology, findings, and implications. Future research directions propose the implications. The included studies mainly provide qualitative and quantitative analysis (cross-sectional), a case study analysis, and descriptive literature analysis to examine the enhanced tourism industry. This will address the theoretical contribution to justify whether social media and technology innovation remain as strong drivers for tourism industry development. Further, the managerial implication is expected to provide meaningful insight to boost tourism industry. The paper is divided into some sections: section 2 discusses research method, section 3 presents result and discussion, and section 4 delivers conclusion.

2. METHODOLOGY

A systematic review was conducted using the Preferred Reporting Elements for Systematic Reviews and Meta-Analysis (PRISMA) criteria (Moher et al., 2009; Pahlevan-Sharif et al., 2019). This strategy has the benefit of allowing for the summary and analysis of pertinent material from past investigations. Additionally, authors can conduct more systematic reviews when utilizing the Prisma statement. The data collection was obtained from three databases: EBSCO (1984–2019), Scopus (2005–2021), and Web of Science (2009–2020). The keywords used in the search to find the possible paper were intervention of technology innovation, digitalization, social media, social networking, and enhancing tourism industry outcomes. There were no restrictions on language or publication year during the original search. The full-text references were evaluated, and relevant cited articles were significant to the study's goal. Before a study could be included in the unit analysis, it had to meet certain criteria related to the study's research objective. Two reviewers independently reviewed the research titles, abstracts, and content shown throughout the literature.

The following were the criteria for inclusion of the study: 1) observational, original, or interventional studies; 2) cross-sectional, case study reports, and descriptive literature; and 3) language: papers written in English; and 4) outcomes: relevant and related to the improvement of the tourism industry. Editorials, literature reviews, proceeding letters, conference abstracts, and journals that are not peer-reviewed were excluded. When the two reviewers have opposing viewpoints, a dialogue will be held to reach an agreement. If the two reviewers could not reach an agreement, a third opinion was considered. The relevant data among all studies, including titles, abstracts, and full text of selected eligible publications, was reviewed by the first reviewer, and the validity was independently reviewed by the second reviewer. In addition, the authors, publication time, country of research or case, study design, and intervention findings to enhance tourism industry indices were retrieved from the selected studies. The two reviewers handled disagreements, and if necessary, a third reviewer would be a decision-maker for the judgment.

The SPSS, Cohen's Kappa statistics, analysis was used to assess the two reviewers' agreement on the quality of the selected study and evaluation processes. Kappa indicates no agreement if 0.0, a very little agreement between 0.01-0.20, a fair agreement between 0.21-0.40, a moderate agreement between 0.41-0.60, a significant agreement between 0.61-0.80, and a nearly perfect agreement between 0.81-1.00 (Vita et al., 2021). The included studies are summarized in Table 1. They were all published between the years 2009 and 2020 and came from various study settings. Based on the country setting, there are five studies included: one study was conducted in Malaysia, one study was conducted in Mauritius (Seetanah, 2019), one study was conducted in Iran (Ghaderi et al., 2018), one study was conducted in

South Korea (Park et al., 2016), and the other one study was conducted in Spain. Both five studies used a cross-sectional study design (Palacios-Marques et al., 2015). Further, there was one study conducted with a case study report (Dubey, 2016) and three other studies were conducted with descriptive literatures (Badawy, 2009; Neuhofer et al., 2012; Pencarelli, 2020).

Table 1. Summary of Included Studies

Sources (Years)	Countries	Design of Study
Seow et al. (2020)	Malaysia	Cross-sectional
Seetanah (2019)	Mauritius	Cross-sectional
Ghaderi et al. (2018)	Iran	Cross-sectional
Park et al. (2016)	South Korea	Cross-sectional
Palacios-Marques et al. (2015)	Spain	Cross-sectional
Dubey (2016)	Not specified	Case study report
Neuhofer et al. (2012)	Not specified	Descriptive literature
Pencarelli (2020)	Not specified	Descriptive literature
Badawy (2009)	Not specified	Descriptive literature

Source: Authors (2024)

3. RESULTS AND DISCUSSION

The total number of articles was 156, extracted from the three electronic databases after initial screening. After eliminating duplication, the 69 articles were subjected to title and abstract screening. After further screening the titles, abstracts, and full contents, the qualitative studies included nine articles. The two independent reviewers screened the titles and abstracts of 156 articles and found significant agreement (Kappa 0.725, P-value 0.001), while screening of 69 articles showed significant agreement (Kappa 0.706 with P-value 0.001). Among 69 articles, 60 of them are then declined due to different outcome from the purposed aim so that those articles do not fit for further step. Finally, the full-text of 9 articles that fit with intervention and outcome inclusion criteria was screened for significant agreement (Kappa 0.610 with P-value 0.001) and summary of the findings depicted in Table 2.

Table 2. Summary of Findings

Authors	Findings
Seow et al. (2020)	The performance of tourism small and medium-sized enterprises (TSMEs) is statistically associated with social media adoption. Furthermore, the practice of innovation mediates the significant link between social media adoption and TSME performance, as well as the extent of business planning and SME performance. These findings indicate that social media not only contributes to fostering company innovation but also functions as a strategic business tool that enhances organizational performance.
Seetanah (2019)	Telecommunication structures and development are seen to have positively contributed to tourism demand (with a stated coefficient and elasticity of 0.27), though to a lower extent than the other conventional factors. The favorable relationship could also point to the essential role that telecommunication, particularly the internet, plays in both the operators' and national tourism promotion agencies' marketing.

Authors	Findings
Ghaderi et al. (2018)	In the modern era, travel information primarily comes from the Internet, social media, word of mouth, newspapers, print materials, and travel agencies. These data underscore the shift in tourist behavior, particularly in relation to their intentions and criteria for destination selection. Additionally, the survey results empirically support the theoretical proposition that travel intentions exert a direct and favorable influence on the selection and visitation of smart destinations.
Park et al. (2016)	Local tourism and pertinent tourist information constituted 23.1% of the total postings on Facebook pages managed by Korean local governments. According to the results of an ANOVA test, the provincial government's Facebook page exhibited the highest average volume of postings within a seven-day period, a finding that was statistically significant across different types of pages. This suggests that social media is anticipated to become increasingly integrated into the smart tourism ecosystem. Furthermore, the number of Facebook followers demonstrated a substantial correlation with both the volume of incoming tourists and the quantity of tourism-related postings.
Palacios-Marques et al. (2015)	The empirical study demonstrates a favorable relationship between online social networks and innovation capacity, with $R^2 = 0.24$ indicating a good explanatory capacity. The large number of variables involved in a hotel's success can be explained by the relationship between online social network, innovation capacity, and company performance ($R^2=019$). Innovation capacity fully mediates the relationship between online social networks and performance, and it has a significant impact on tourism business performance.
Dubey (2016)	Smartphones and social media will serve as escorts, advisers, and agents. Tourists will evaluate every aspect of tourism based on interactive experience (personal and others), with social media opinions playing a significant role. In addition to social media, the internet, Mobile Computing, Clouds, Smart Phones with Travel Apps, GPS Technology, and other elements influenced the other factors.
Neuhofer et al. (2012)	Platforms such as Facebook, YouTube, and TripAdvisor facilitate user engagement with both personal networks and unfamiliar fellow travelers, allowing individuals to share and experience destination-related content and the experiences of others. Through social media channels, such as Twitter, tourists can interact with the broader public in real time, communicate immediate issues encountered at the destination, and articulate specific requests. Destinations can respond to these interactions by engaging in virtual co-creation with tourists. The integration of information and communication technologies (ICTs), particularly those afforded by mobile technologies and social media platforms, is posited to underpin the emerging concept of "technology-enhanced" destination experiences.
Pencarelli (2020)	Tourists use social media platforms to publish in context; it serves as a tool to build the identity and experiences while also gaining social support. Other roles in SEM, social media marketing, and inbound marketing are also changing dramatically, as it has become critical for all tourism-related businesses to be visible on search engines and to be highlighted on social media platforms to grow their online reputation through careful management of digital word-of-mouth.
Badawy (2009)	YouTube, Facebook, and Twitter are more than just social media platforms; they are primary means by which individuals, corporations, and even government communicate with one another, their consumers, and constituents. It has become an inextricable aspect of life that cannot be turned off or ignored and a platform for bringing individuals together. Tourism, hospitality, and leisure have changed and are undergoing fundamental changes. It is undergoing a pivotal marketing transition because of the internet's interactive inquiry.

Source: Authors (2024)

As a result, all the chosen studies met the quality assessment criteria. The systematic review process of the study depicts in Figure 1.
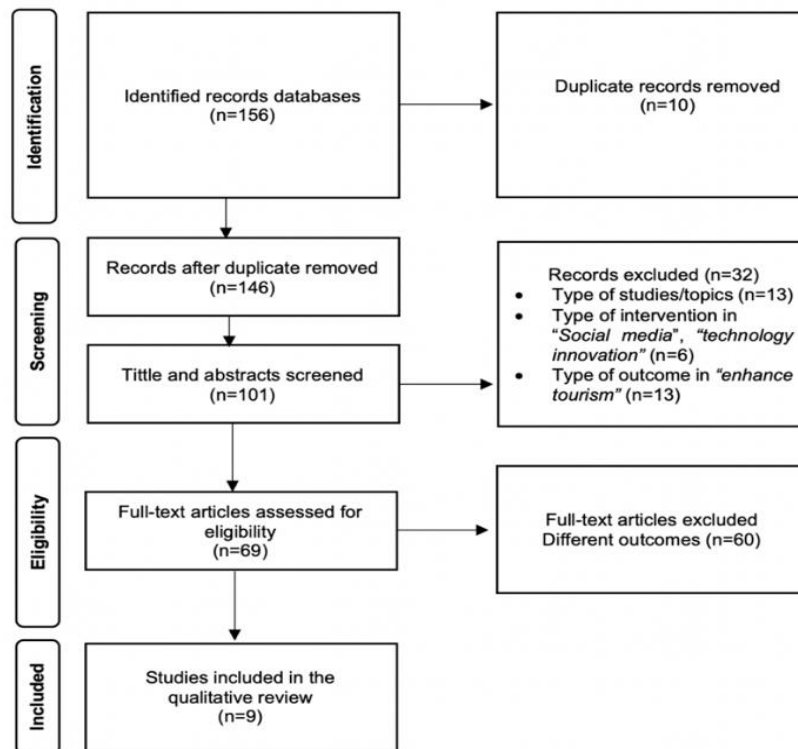

Figure 1. Systematic Review Process
Source: Authors (2024)

Badawy (2009) found that social media has evolved into an essential part of life that cannot be turned off or avoided and is a way to bring people together. Face-to-face contact is rapidly fading. Digital communication has supplanted it. The tourism, hospitality, and leisure industries have changed over time and are undergoing significant changes. Due to the Internet's interactive capabilities, it is undergoing a critical marketing transition. Geographic barriers to entry into the hospitality market are no longer an issue. The tourism industry's reach was broadened by globalization. Facebook, YouTube, and Twitter are more than just social media platforms; they are the primary platforms for communication, among others, which impact the tourism industry's performance. Neuhofer et al. (2012) argued that individuals could use social media sites to engage with their social circles and unfamiliar consumers, allowing them to explore destinations and live experiences of other consumers. These social media linkages enable tourists to interact with the public in real-time, report current destinations' situations, and express needs that destinations can respond to through virtual co-creation.

The concept of technology-enhanced destination experiences is pivotal for understanding its role as a primary driver of innovation, strategic advantage, and competitive edge within the tourism industry. This understanding is crucial for leveraging technology to achieve success in the sector. Palacios-Marques et al. (2015) found that online social media

refers to the technology, procedures, and culture required to convert knowledge inputs into usable outputs for the organization. In the case of the hotel industry, its use as a business intelligence tool should take a holistic approach, considering both technological and organizational elements. In the empirical study, the innovation capacity positively correlates with online social media, demonstrating a high explanatory capacity (R^2 = 0.24). Relationships between online social media, innovation capacity, and firm performance (R^2 = 0.19) explain the great number of factors that contribute to the success of a hotel and the hospitality industry, which have a relevant impact on the tourism industry's outcome.

Not only in the industrial area but also in the governmental sector like study in Korea, Park et al. (2016) discovered that social media will play a more significant role in the intelligent tourism ecosystem. Among the posts on local government Facebook pages, 23.1% were related to local tourism and tourist information. The ANOVA analysis showed that, on average, the provincial government's Facebook page had the highest total number of posts within seven days, and this finding was statistically significant (F[4,128] = 4.37, p < 0.01) across different categories, including metropolitan areas and provinces. Furthermore, there was a strong correlation between the number of Facebook followers and both the volume of incoming tourists (r = 0.51, p < 0.01) and the quantity of tourism-related posts (r = 0.31, p < 0.01). This implies that local Korean governments mainly use online platforms like Facebook to interact with the public and promote tourism.

Dubey (2016) found that social media will be a technological trend for the world tourism blueprint. Tourists will rate all tourist areas based on interactive experiences, and social media feedback will be critical. It will change the tourist industry's recognized wisdom and understanding. Everything will be handled, booked, and searched just with the use of one's fingers. Future tourists will be highly conversant, elegant, knowledgeable, and refined. They will order online, expect a quick answer, and connect well to social media. Ghaderi et al. (2018) added that social media and the Internet are major tools for travel information sources in enhancing smart tourism aspects of knowledge and understanding. It was statistically proven that social media and the Internet (45.3%), word of mouth (35.3%), newspapers and print material (13.7%), and travel agencies (5.8%) were the most popular sources of information.

Seow et al. (2020) found a positive link between social media use and business performance in tourism SMEs. Social media use and business planning positively influence SME performance, mediated by innovation practices. Consequently, social media usage emerges as a catalyst for technological innovation and an effective business tool for improving industry performance. To raise market awareness, TSMEs should be encouraged to use social media platforms to adopt various technological innovation strategies.

Pencarelli (2020) argued that tourists frequently utilize social media to post content on platforms; this serves as a tool for them to improve their own identity and image while also gaining social support. Other roles in search engine marketing, inbound marketing, and digital marketing are developing rapidly, as it has become critical for all tourism-related businesses to be visible on search engines and highlighted on social media channels to grow their online reputation through careful management of electronic word-of-mouth.

Neuhofer et al. (2012) identified a novel concept in which information and communication technologies (ICTs) facilitate a range of tourist activities, including information retrieval, comparison, decision-making, travel planning, communication, and post-travel sharing. Particularly, advancements in technology and social media enable destination marketing organizations (DMOs) to engage in co-creation of experiences not only within the physical context of the destination but also within a virtual environment. This extension of experience co-creation into the digital realm represents a significant development in destination marketing strategies. According to Dubey (2016), other variables influencing the tourism industry include the Internet, mobile computing, clouds, smart phones with travel apps, GPS technology, and so on. Tourism decision-making and travel service promotion will be heavily influenced and reliant on the Internet. Furthermore, human-artificial intelligence hybridization will handle future tourist service requirements. In space tourism development, space technology in transportation systems will change tourists' mobility.

Ghaderi et al. (2018) conducted an empirical survey in Iran to examine factors influencing tourist behavior, specifically their willingness to visit chosen destinations in the context of advancing information and communication technologies (ICTs). The study yielded significant results, with travel intention exhibiting a correlation coefficient of 0.630 and smart tourism selection showing a correlation coefficient of 0.825. These findings underscore the positive influence of travel intention on the selection and visitation of smart destinations, thereby highlighting its beneficial impact on the tourism sector. Thus, the development and growth of the ICT sector are significantly important. In the case of Mauritius, Seetanah (2019) found the telecommunication infrastructure to positively impact tourism demand, though to a lower amount than the other classical factors (with a stated elasticity and coefficient of 0.27). The positive relationship could also speak to the critical role that telecommunications, particularly the Internet, play in marketing the location and its image by both operators and national tourism promotion agencies. Telecommunication is significantly increasing business functions in the area, which is a remote and somewhat unknown tourist destination. This allows enterprises to work more efficiently at lower production costs, resulting in enhanced competitiveness. On the other hand, Pencarelli (2020) found that IoT, VR, AR, AI, connectivity, and Web 4.0 are examples of new digital technologies that enable the concepts of tourism 4.0

and smart tourism from the perspective of the fourth industrial revolution. When developing tourism technology, the perspectives of sustainability, circular economy, quality of life, and social value must be considered.

This study provides a systematic review of the social media and technology innovation impact on the tourism industry's development by finding relevant literature. The study added to the existing knowledge base by delivering an updated comprehensive view and highlighting research directions. To answer the study objective, we evaluated nine screened and reviewed articles by investigating the findings of intervention and outcome. The study fulfilled the quality assessment criteria with statistical evaluation, using Cohen's kappa, and included significant agreement (Kappa 0.610 with P-value <0.001). Hence, this systematic review study positively supports this study.

The result shows the social media platforms have the most significant impacts on the tourism industry's development. According to the study findings, Facebook, YouTube, and Twitter are the most common platforms. Other platforms such as Instagram, WhatsApp, WeChat, QQ, Qzone, and TripAdvisor are also found in this study but are rarely common. However, Facebook is the most popular platform for digitalization and word of mouth, especially marketing activities. In addition to the trend distribution of publication, social media has positively impact on tourism increasingly since 2010 to 2021. Furthermore, social media has relatively dominant to contribute towards variant of studies. As a result, hospitality leisure and sport tourism study are the most use on social media impact.

Kumar et al. (2021) found that Facebook still has the largest number of followers compared to YouTube, Twitter, and other social media in using DMSs for tourism activities, which means in 2020, daily active users were 1.82 billion and monthly active users were 2.7 billion. For instance, Tourism Small-Medium Enterprises (TSMEs) in Malaysia, the hospitality industry in Spain, such as hotels' performance, and Korean government agencies in the tourism sector use Facebook to interact with tourists in real-time, express, and virtual co-creation to enhance tourism. Neuhofer et al. (2012) developed the DMO idea for tourism with the goal of transforming a physical space into a virtual version. Digital content creators are becoming a popular tool for tourists and tourism firms in creating their own multi-experiences. Tolkach & Pratt (2021) found YouTube is one of the biggest digital video-sharing platforms and has become the second most common website in the universe after Google. Content creators can easily upload and share their travel experiences through the platform, which has almost 2 billion monthly active users. Thus, YouTube's roles are significantly important in creating market awareness and enhancing tourism performance, especially for TSMEs, according to Neuhofer et al. (2012) study.

Twitter is another social media platform that has a significant impact on tourism. Gulati (2021) found Twitter to be an open access platform for tourist networking, which had approached 290.5 million users in 2019 and had become a popular microblogging platform by allowing direct connection to the live experiences in the destination and sharing them with other users virtually. Nowadays, social media and ICTs are heavily affecting modern travelers in obtaining and sharing in-depth tourism information (Ghaderi et al., 2018). The successful destination of the tourism industry's performance will be influenced and impacted by innovation capacity integrated effectively with social media and ICT. In the case of the hospitality industry in Spain, Palacios-Marques et al. (2015) found innovation capacity fully mediates the relationship between online social media and its performance, thus it has a significant impact on it and is always vital in assisting firms to gain a competitive advantage in the marketplace. Moreover, innovation capacity in technology increasingly mediates tourism industry experiences.

Technology innovation continues to reform the tourism industry in various countries, according to Razzaq et al. (2021), which is a collection of real and online content designed to improve the visitor experience, especially when looking for information about planned destinations, accommodations, weather and climate trends, economic and geopolitical conditions, online travel reservations, procurement, and payment, as well as capturing memories. For instance, in Iran, Ghaderi et al. (2018) introduced technological innovation to facilitate tourism travel to a smart destination. According to Dubey (2016), smart destinations will be reliant on the Internet, social media, mobile computing, clouds, smartphones with travel APPS, GPS technology, and other technologies that will influence tourist decisions and travel services, as well as a hybrid of human and artificial intelligence that will help smart tourism services like Virtual Reality (VR) and Augmented Reality (AR) implemented in hospitality sector (Orús et al., 2021) or destination image context (Flavián et al., 2021).

Another key factor in enhancing smart tourism, according to Seetanah (2019), is telecommunication infrastructure. This study found that telecommunication has made a positive contribution to tourism development in the small island of Mauritius. The important role of telecommunication is as an internet service and a tool in operational, marketing destination, and tourism branding. Furthermore, Gholipour et al. (2021) stated that investments in ICT and telecommunications have substantially improved sustainable tourism development in numerous economic, social, and environmental aspects. Thus, this study emphasizes the critical role of governments in developing and enforcing laws and regulations that facilitate and support private sector investments, particularly in the ICT and telecommunications sectors.

Nevertheless, Pencarelli (2020) stated that technological innovation had changed the concept of tourism to become smart tourism, which integrates the new digital technologies and the sustainability principles in combining technologies with aspects of social, economic, and environmental sustainability. Hence, this integration can improve the quality of tourist experiences and the performance of the tourism industry. Moreover, smart tourism can be adopted with network-based technologies such as blockchain to influence tourism transactions and evolve the tourism industry's performance (Nam et al., 2021; Prathivi & Oktavio, 2022). Valeri & Baggio (2021) argued that blockchain is a cutting-edge technology that can be used in various industries. Thus, adopting social media and technological innovation and building facilities and infrastructure have a significant influence on supporting sustainable tourism performance as depicted in Figure 2.

The theoretical insights in this study describe as follows: first, social media has become the most popular digital communication and digital creative for tourists' connectivity, and it has been defined as the modern concept of digital word of mouth. Tourists receive and share information and data about tourism activities and experiences rapidly and responsively. Second, technological innovation in mediating tourism development and growth has been described as a driving force of strategic management in adopting ICT and telecommunication. Thus, technological innovation in the tourism industry implies many aspects of changing life behaviors and experiences and disrupting traditional tourism and hospitality business operations (Nuryyev et al., 2020). Third, destination marketing organizations (DMOs) and smart destinations are co-creation concepts with competitive advantages in enhancing tourism performance in the digital era.
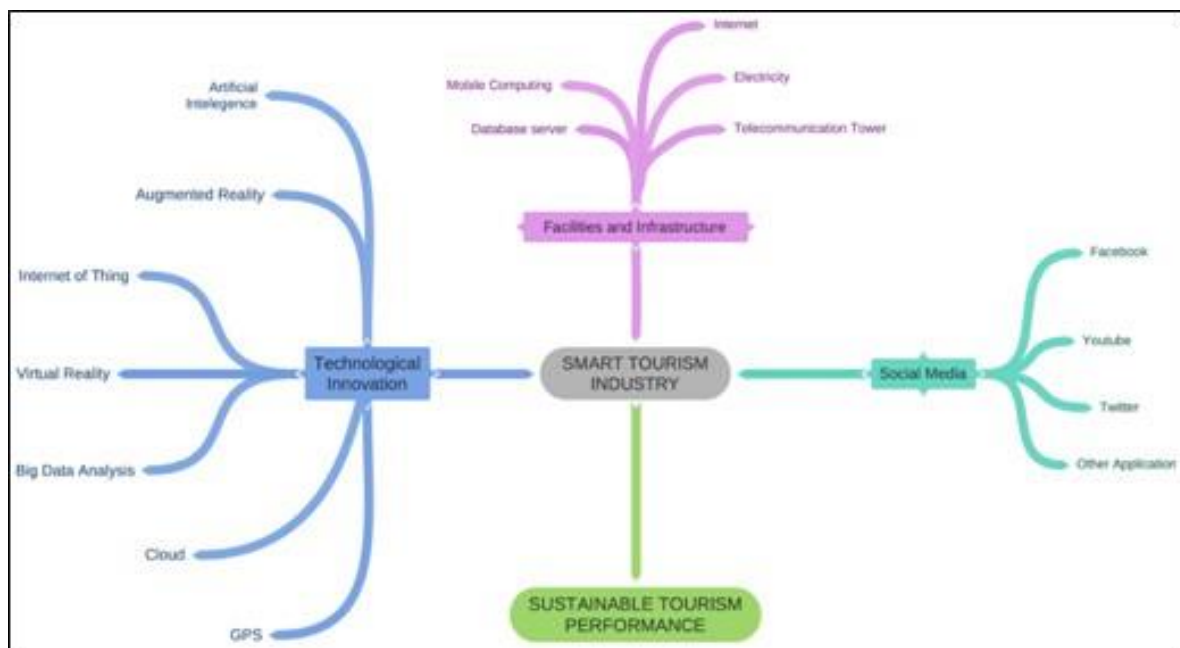

Figure 2. Sustainable Tourism Performance
Source: Authors (2024)

Lastly, tourism 4.0 and smart tourism in influencing tourists' experiences and tourism destinations have been known to help with sustainable tourism in sustainability. Social, economic, and environmental aspects are key issues for sustainable tourism development (Streimikiene et al., 2021).

The managerial implies a few points as follows: first, collaboration and synergy among governments, tourism firms, social media companies and ICT companies include telecommunication, big data analytics, and blockchain, should be tightened in supporting tourism facilities and marketing activities. Second, tourism small-medium enterprises (TSMEs) and social participation in sharing ideas, information, and data online and seminars or conferences regarding tourism development and economic growth are proper strategies for enhancing tourism awareness and brand competitiveness. Third, governments should be more active and massive in formulating policies, regulations, promotions, and coordination among tourism decision-makers and practitioners to support tourism elements. For instance, social media companies, ICT companies, online travel agents, and tourism destinations are part of the tourism decision-makers. Finally, to increase tourism demand, meet tourists' expectations, and improve tourism experiences in co-creation, governments and smart tourism practitioners must continuously evolve their hand in customer satisfaction surveys and evaluations.

4. CONCLUSION

This study concludes a few contributions to this systematic review study. The statistical result shows social media and technological innovation have significant impact in tourism industry development and economic growth. The tourism concept has changed to become smart tourism and it changes the way of tourists' life and behavior when adopting digital marketing, digital creative, and digital payment in sharing information and data about tourism experiences and business transaction. Thus, the tourism industry has become more modern, rapid, and intelligent due to the innovation capacity of social media and ICT adoption and needs a lot of effort and attention to develop more businesses and facilities to fulfil tourist demand and meet customer expectation and satisfaction. The relevant stakeholders, governments, and tourism practitioners should collaborate and synergize to develop technological innovation strategies that support tourism competitiveness and sustainable tourism development.

This study had some limitations confirmed by a widely systematic review in the intervention of social media and technological innovation and the research outcome of the tourism industry. For instance, future systematic studies should focus specifically on blockchain technology adoption impact on the tourism which was not found in the findings.

Furthermore, most research uses a cross-sectional strategy, case report study, and descriptive literature review. As a result, it was not easy to draw solid conclusions on a causal effect between factors. Therefore, future research should combine with longitudinal studies strategy. In addition to the validity and consistency of the empirical results, future research can also apply both qualitative and quantitative research methods, such as explanatory or exploratory analysis, by using statistical or Multi Criteria Decision Making (MCDM) techniques in the smart tourism industry or other industries.

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