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Building Sustainable Tourism: The Adaptation of Digital Transformation on Travel Agencys and Impact on Economic Growth

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Abstract: The research discusses the role of digital transformation in building sustainable tourism and its relationship to achieving sustainable development goal (SDG) number 8 in Indonesia. Research focuses on digital transformation such as e-commerce, digital marketing, and big data which can improve travel agent businesses and create more opportunities to market tourist destinations. By using the Systematic Literature Review (SLR) method, this research emphasizes that the use of technology in the tourism business has the potential to increase efficiency, reduce operational costs, and enable the provision of services tailored to client needs. However, there are still gaps in research regarding the role of technology in supporting sustainable tourism, especially local community-based and environmentally friendly tourism. The Sustainable Tourism Digital Hub was proposed with the hope of supporting the economic growth of local communities and increasing the inclusiveness and sustainability of the tourism industry, which is in line with SDG 8.

Keywords: Sustainable Tourism, Digital Transformation, SDG 8, Economic Growth.

INTRODUCTION

Tourism serves as a cornerstone of economic development and a primary source of foreign exchange earnings for many nations, contributing substantially to GDP, employment, and community welfare (Cudai, 2024). Its significance goes beyond economic metrics, as the sector fosters cultural exchange, enhances infrastructure, and promotes global connectivity. However, the rapidly evolving global landscape, characterized by technological advancements and changing consumer preferences, necessitates continuous innovation to sustain tourism's economic and social contributions. The rise of digitalization marks a transformative era in tourism. With travel agencies transitioning from conventional operations to technology-based platforms, efficiency, competitiveness, and customer engagement have significantly improved (Sofyan, 2023). Bogdanovych (2019) highlights a paradox of economic growth, wherein consumers demand more personalized and high-value experiences, prompting businesses to adopt innovative approaches to meet these expectations. Digital platforms, encompassing websites, mobile applications, and online marketing tools, have emerged as essential

components for expanding market reach and enhancing service delivery. Technology's role in reshaping tourism is particularly evident in its ability to align the sector with global sustainability goals. Sustacha (2023) asserts that digitalization enables the development of environmentally friendly and inclusive business models, which are crucial for achieving the Sustainable Development Goals (SDGs), particularly Goal 8, which focuses on decent work and sustainable economic growth. Beyond economic gains, digital transformation fosters long-term resilience by enabling businesses to respond to environmental challenges, enhance operational efficiency, and deliver innovative solutions.

The emphasis on sustainable tourism stems from its potential to address pressing global issues such as climate change, biodiversity loss, and social inequality. Sustainable tourism, as defined by the UNWTO, seeks to balance economic, social, and environmental objectives, ensuring that current tourism practices do not compromise the needs of future generations (Pan et al., 2018). Mihalic (2024) underscores the importance of this balance, advocating for a holistic approach to tourism development that maximizes positive social and economic impacts while minimizing environmental harm. Digital transformation has become a critical enabler of sustainable tourism. Emerging technologies such as IoT-supported smart tourism applications, Big Data analytics, and Virtual Reality enhance resource efficiency, improve customer satisfaction, and promote co-creation between tourists and service providers (Bogoyavlenska, 2024). These innovations allow businesses to personalize travel experiences, automate processes, and reduce operational costs, making sustainability not only a strategic goal but also an achievable reality (Shapiro & Mandelman, 2021). For instance, real-time recommendation systems and digital marketing tools empower travelers with better decision-making while promoting environmentally responsible behavior (Travassos, 2024).

Indonesia, with its rich cultural heritage and natural diversity, stands at the forefront of sustainable tourism development. The tourism sector is a vital contributor to Indonesia's economy, directly supporting job creation, community development, and national GDP. However, challenges such as over-tourism, environmental degradation, and limited infrastructure pose significant barriers to achieving sustainability. Despite these challenges, the adoption of digital technologies and destination diversification strategies has enabled the sector to adapt and recover, particularly in the aftermath of the COVID-19 pandemic (Paksi et al., 2024). Investments in green infrastructure, workforce development, and community empowerment are integral to advancing Indonesia's tourism sector. Studies highlight the importance of adopting environmentally sustainable practices, such as eco-friendly accommodations, renewable energy use, and waste management systems, to minimize the environmental footprint of tourism activities (Sustainable Earth Reviews, 2024). Moreover, fostering partnerships between government, private stakeholders, and local communities is essential for achieving long-term sustainability.

This study aims to investigate the role of digital transformation in fostering sustainable tourism development in Indonesia. By examining how travel agencies leverage digital tools to enhance operational efficiency, customer engagement, and sustainability practices, the research seeks to provide actionable insights for policymakers and industry stakeholders. Furthermore, the study emphasizes the need to align tourism strategies with broader economic and environmental goals, ensuring that the sector continues to thrive as a pillar of Indonesia's sustainable development.

This study offers a unique perspective on the integration of digitalization into the sustainable development of tourism in Indonesia. Unlike previous research, which primarily focuses on the economic or social impacts of tourism in isolation, this research bridges the role of advanced technologies—such as IoT, Big Data, and digital marketing—with the achievement of sustainability goals (SDGs). It emphasizes aspects of inclusive economic growth, operational efficiency, and environmental conservation within the tourism sector.

One of the key contributions of this research is its specific focus on travel agencies as pivotal players in the digital transformation of tourism. By exploring how these traditional entities can adopt technology to deliver more responsive and personalized travel experiences, the study highlights their potential role as drivers of sustainable tourism. Moreover, this study uniquely examines the synergy between digital technology and local wisdom. It explores how technology can be adapted to enhance the cultural and heritage values of tourism destinations in Indonesia. This approach seeks to ensure that digitalization not only improves efficiency but also preserves and respects local traditions.

Unlike prior studies that often emphasize a single dimension of sustainability—be it economic, social, or environmental—this research provides a holistic analysis by integrating all three dimensions through the lens of digitalization. It introduces a new model for assessing how technology impacts the balance between economic growth, environmental preservation, and social benefits in tourism. In the post-pandemic context, the research positions digitalization as a cornerstone for accelerating the recovery of Indonesia's tourism sector. By focusing on adaptive strategies such as destination diversification and smart tourism technologies, the study offers practical guidance for addressing future challenges in the industry. Finally, this research contributes to policy-making by providing data-driven recommendations for the sustainable management of tourism. By offering actionable insights, it not only enriches academic literature but also supports decision-making processes for government bodies and industry stakeholders aiming to advance sustainable tourism in Indonesia.

METHOD

The method used in this study is the Systematic Literature Review (SLR). This approach ensures that the data is derived from credible, relevant, and up-to-date sources (Tranfield et al., 2003). Xiao et al. (2017) highlighted that by summarizing, testing, and analyzing related journal literature, existing hypotheses can be evaluated, and new theories can be developed. Referring to Liberati et al. (2020), the SLR method can be conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses. In this study, the SLR method was employed to analyze the impact of digital transformation adaptation on travel agencies and its influence on economic growth. The population is Travel agents in Indonesia. Inclusion criteria qualify a study for inclusion in the Systematic Literature Review (SLR). Conversely, exclusion criteria define the factors that disqualify a study from being included in the SLR (Yusril & Widyaningrum, 2019).

This study focuses on various research areas related to digital transformation and its impact on travel agents and the tourism sector in general. Included studies will examine the effects of digital transformation on the operations of travel agents, such as changes in business processes, operational efficiency, and the adoption of new technologies. Additionally, research investigating the contribution of the tourism sector to a country’s economic development will be analyzed to understand how tourism drives economic growth and improves societal well-being. Research on the impact of tourism in achieving Sustainable Development Goal 8 (SDG-8), which emphasizes inclusive and sustainable economic growth as well as decent work opportunities, will also be prioritized. These studies are expected to provide in-depth insights into how the tourism sector can serve as a key driver of SDG-8 objectives. To ensure the quality of data sources, only studies indexed in reputable international databases, SINTA 3 or above, and/or GARUDA will be included. However, comparative studies and news articles will be excluded, as they do not align with the analytical goals of this review.

Screening

The PRISMA 2020 diagram illustrates the flow of information through various stages of the systematic review process. This diagram maps the number of records identified, included, and excluded during the review.

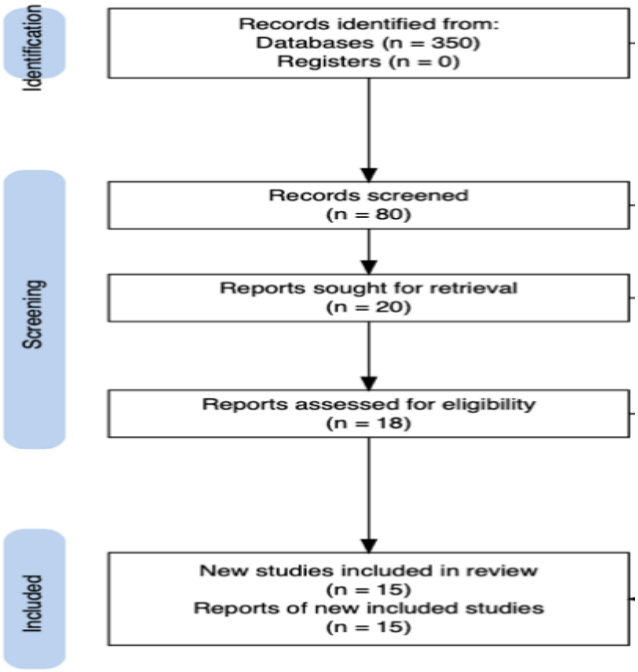


Figure 1. The Prisma Screening

Data Extraction and Synthesis

Data extraction is performed on the selected studies to identify the core findings. This is followed by synthesizing the results of the collected studies using meta-analysis techniques (e.g., forest plots) or narrative techniques (e.g., meta-synthesis).

RESULTS AND DISCUSSION

To examine the potential of digital technology in enhancing the sustainability of the tourism sector, particularly in the management of community-based and environmental initiatives, a thorough review of several relevant journals was conducted. This analysis aimed to explore the role of various digital innovations in fostering sustainable tourism practices. By focusing on technologies such as e-commerce, digital marketing, and big data, the study sought to gain a deeper understanding of how these tools can be harnessed to improve operational efficiency, promote environmentally conscious practices, and facilitate greater involvement of local communities in tourism development. Based on the research gap identified, the proposed initiative is the Sustainable Tourism Digital Hub. The goal of this innovation is to build a digital e-commerce platform that enables travel agents to directly sell tourism products to their customers using digital technologies such as online marketing, big data, and digital destination management systems. This platform can connect tourists with environmentally friendly and community-based local tourism experiences, such as cultural or ecological tourism. It can also help them earn more money for their vacations. Travel agents can use this system to promote sustainable tourism destinations, such as nature or agro-tourism, by offering packages that are more focused on sustainability. Additionally, big data can be used to analyse market trends and tourist preferences, allowing travel agents to tailor their offerings to better meet the needs of a sustainability-focused market. Through the development of community-based tourism

destinations, fostering local economic growth, and enhancing inclusivity and sustainability in the tourism industry, this initiative will support SDG Goal 8.

Digitalization in Tourism

The increasing adoption of digital technologies in the tourism sector has transformed how services are marketed, delivered, and experienced. Studies by Henok and Sahil (2024) and Ali et al. (2022) highlight the growing interest in digital tourism, particularly since 2017, driven by advancements in technology and the COVID-19 pandemic, which accelerated the adoption of digital solutions in the industry. Digitalization enhances operational efficiency, expands market reach, and fosters stronger customer relationships (Nataliiya et al., 2024). It also supports the development of smart tourism ecosystems, e-tourism, and innovative destination experiences (Henok & Sahil, 2024). Digital marketing is a crucial tool in enhancing the tourism experience, as highlighted by Soniansih (2021), who emphasizes the internet's role in simplifying travel planning and enabling competitive pricing. Similarly, Albattat (2021) notes that online marketing positively impacts travel agency sales, with factors such as price, website design, and information quality influencing consumer decisions.

Tourism and Sustainable Development

Tourism is recognized as a significant contributor to economic development, employment, and environmental sustainability. Manisha and Pramendra (2024) identify tourism as a strategic sector that delivers economic benefits while fostering inclusive growth and supporting Sustainable Development Goals (SDGs). Adebayo (2022) highlights the importance of local community participation in sustainable tourism development, particularly in rural and agro-tourism, as a key to achieving long-term sustainability. Tourism's role in achieving specific SDGs, such as SDG 8 (Decent Work and Economic Growth), SDG 12 (Responsible Consumption and Production), and SDG 14 (Life Below Water), is further explored by Hossain and Darda (2021). Their research reveals tourism's potential to enhance biodiversity conservation and resource management while addressing climate change through sustainable marine tourism. Similarly, Nurul Aini (2024) quantifies the positive economic impacts of tourism on GDP and employment, though it also highlights the need to mitigate the environmental consequences, such as increased carbon emissions.

Digital Transformation and Sustainability

Digital transformation is pivotal in achieving sustainable tourism goals. Studies by Nguyen (2021) and Bogoyavlenska (2024) emphasize the role of smart tourism and IoT technologies in improving resource management and enhancing the consumer experience. Gürtzgen et al. (2021) and Shapiro & Mandelman (2021) note that digital tools reduce transaction costs, improve operational efficiency, and create value for customers. The integration of digital tools into tourism management also facilitates co-creation and tailored experiences, as observed by Travassos (2024). In Indonesia, digital transformation is driving innovation in the tourism sector. Fadli et al. (2022) and Heliany (2019) point to programs like the Wonderful Startup Academy and Destination Development as examples of government initiatives leveraging digital tools for sustainable tourism development. Braun (2022) demonstrates the short-term economic benefits of digital adoption, including increased GDP and job creation, underscoring the sector's critical role in driving economic growth.

Challenges and Opportunities

Despite the potential benefits, challenges remain. Adebayo (2022) and Mohan (2022) stress the need for stronger collaboration among stakeholders and enhanced legal and institutional frameworks to ensure sustainable tourism practices. In Southeast Asia,

policymakers are encouraged to prioritize green infrastructure investments and workforce training to balance economic growth with environmental preservation (Nurul Aini, 2024). Meanwhile, Kawuryan et al. (2022) suggest exploring new themes like sports tourism and sharia tourism to diversify and strengthen tourism resilience.

In Southeast Asia, policymakers are encouraged to prioritize green infrastructure investments and workforce training to balance economic growth with environmental preservation (Nurul Aini, 2024). Such initiatives could include developing eco-friendly facilities, integrating renewable energy sources into tourism operations, and providing skills training for the local workforce to manage sustainable tourism services. These efforts not only contribute to environmental conservation but also enhance the competitiveness of the region's tourism industry by appealing to environmentally conscious travelers.

Meanwhile, Kawuryan et al. (2022) suggest exploring new themes like sports tourism, sharia tourism, and cultural heritage tourism to diversify and strengthen tourism resilience. These specialized niches not only cater to emerging market demands but also promote regional identities and local cultures, creating unique experiences for tourists while supporting the economic development of host communities. The development of such niches requires targeted strategies, including marketing campaigns, infrastructure development, and training programs to equip local stakeholders with the necessary skills to deliver high-quality services.

Additionally, digitalization itself presents challenges, such as the digital divide between urban and rural areas, data privacy concerns, and the need for continuous technology upgrades. Addressing these challenges will require comprehensive strategies that include investments in digital infrastructure, capacity building for tourism operators, and policy frameworks to regulate data use and protect consumer rights. By overcoming these barriers, the tourism sector can fully leverage digital transformation to foster inclusivity and sustainability, ultimately contributing to broader development goals.

Discussion

An analysis of 15 journals shows that there is insufficient research on how digital technology can help the tourism sector become more sustainable, particularly in community-based and environmental management. Some studies suggest that technologies such as e-commerce, digital marketing, and big data can improve efficiency, marketing, and service quality. However, few studies specifically examine how these technologies can enhance the sustainability of the tourism sector and the extent of their adoption in Indonesia. The tourism sector is one of the pillars of the country's economy. Digitalization in the tourism sector can support the achievement of SDGs, particularly Goal 8, which aims to "Promote Sustainable and Inclusive Tourism," by focusing on local community participation, technology utilization, and the implementation of data-driven policies that integrate economic, social, and environmental aspects.

This research was conducted independently and did not receive any external funding or financial support from any organizations, institutions, or grant providers. The author solely funded and supported the research through personal resources, ensuring complete independence in the study's design, execution, and analysis. The absence of external financial backing reflects the author's commitment to conducting the research without external influence, maintaining objectivity and integrity throughout the process.

Conflicts of Interest

The author declares that there are no conflicts of interest related to this research. The study was conducted with complete transparency, and the author has no financial, personal, or professional relationships that could have influenced the outcome or interpretation of the findings. Digital transformation has a profound influence on economic development and its

contribution to achieving Sustainable Development Goal (SDG) 8 in Indonesia. Digital technologies such as e-commerce, digital marketing, and big data have shown significant effects on the tourism sector. These technologies not only enhance the operational efficiency of travel agencies but also create new opportunities for promoting sustainable tourism destinations, supporting economic growth, and generating decent work opportunities.

However, there are still limitations in the literature explicitly examining how these technologies support tourism sustainability, particularly in integrating local wisdom and cultural heritage into the digital ecosystem. With the adoption of digital transformation, travel agencies can manage services more effectively through automation and real-time data access, enabling faster and more efficient operations, reducing operational costs, and enhancing customer satisfaction. This demonstrates that digitalization plays a crucial role in the recovery and future resilience of the tourism sector.

Technology allows travel agencies to reach global markets through digital platforms, expand their customer base, and adapt business models to meet the evolving demands of tourists. Through digitalization, integration among economic, social, and environmental aspects is achieved, such as promoting environmentally friendly destinations and fostering inclusive tourism practices, which significantly contributes to SDG 8. Additionally, digital tools provide a pathway for enhancing community participation, supporting local entrepreneurs, and promoting sustainable practices that align with broader sustainability goals. Further studies on the use of digital technology to support community-based tourism, the utilization of big data for predictive analytics, and the development of smart tourism ecosystems are still necessary. Such research could provide deeper insights into leveraging digitalization for balancing economic growth, environmental conservation, and social inclusivity, thereby shaping a more sustainable future for Indonesia's tourism industry.

CONCLUSION

This study analyses the impact of digital transformation in fostering sustainable tourism, its influence on economic development, and its contribution to achieving Sustainable Development Goal (SDG) 8 in Indonesia. Digital technologies such as e-commerce, digital marketing, and big data have shown significant effects on the tourism sector. These technologies not only enhance the operational efficiency of travel agencies but also create new opportunities for promoting sustainable tourism destinations.

However, there are still limitations in the literature explicitly examining how these technologies support tourism sustainability. With the adoption of digital transformation, travel agencies can manage services more effectively through automation and real-time data access, enabling faster and more efficient operations. This demonstrates that digitalization plays a crucial role in the recovery of the tourism sector.

Technology allows travel agencies to reach global markets through digital platforms, expand their customer base, and adapt business models to meet changing tourist demands. Through digitalization, integration among economic, social, and environmental aspects is achieved, such as promoting destinations, which significantly contributes to SDG-8. Further studies on the use of digital technology to support community-based tourism and the utilization of big data are still necessary.

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