

Incremental Innovation In The Model For Developing Sustainable Mice Tourism Destinations In The City Of Medan From An Esg (Environment, Social, Governance) Perspective

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Abstract

Medan City, as one of Indonesia's economic and trade centers, has great potential for developing the MICE sector. However, MICE development in this city still faces various challenges, such as low awareness of sustainability, limited trained human resources, and suboptimal collaboration among stakeholders. This study aims to analyze the forms and characteristics of incremental innovation in the development of MICE destinations in Medan. This study uses qualitative research methods. The data collection techniques used in this study are semi-structured interviews, observation, group analysis, and focus group discussions (FGD). Data analysis will follow a systematic thematic analysis approach. The results of the study show that the transformation towards sustainable MICE tourism in Medan City takes place through incremental innovation that emphasizes gradual improvements such as digitization, the use of local products, and energy efficiency. This approach is considered most appropriate for local resource capacities and effective in building a culture of sustainable innovation. The integration of ESG principles strengthens environmental, social, and governance aspects through environmentally friendly practices, MSME empowerment, and cross-sector collaboration. The application of the Pentahelix concept forms the basis for inclusive and adaptive collaborative governance. In the future, policy support such as the formulation of Green MICE Guidelines, the provision of incentives, and the establishment of an ESG Forum are expected to make Medan a national and international sustainable MICE destination, while also supporting the achievement of SDGs 8, 12, and 17.

Keywords: *Incremental, Sustainable MICE Tourism Destination, Environment, Social, Governance.*

Introduction

In the context of tourism, sustainable development is crucial to ensure that the benefits of this industry can be enjoyed by all stakeholders, including the local community, without compromising the preservation of the environment and existing natural resources (Suharto et al., 2024).

The concept of *sustainable MICE (Meetings, Incentives, Conventions, and Exhibitions)* has become a major focus in global scientific studies, including in Indonesia. This phenomenon reflects an important paradigm shift in the tourism sector, where sustainability has become a key criterion in the development of MICE tourist destinations. Internationally, many countries have integrated sustainability principles into their strategic planning and the implementation of MICE events, aiming to reduce environmental impact while increasing social benefits for local communities (Asmoro, 2025).

The city of Medan, as the capital of North Sumatra Province and the third largest metropolitan city in Indonesia, has great potential to develop into a major destination for MICE activities. With a population of around 2.5 million in 2024 (Hasibuan et al., 2024), Medan is strategically located as the main gateway to Sumatra and neighboring countries such as Malaysia and Singapore. This geographical advantage gives the city an edge in attracting the global MICE sector.

The supporting infrastructure for the MICE sector in Medan continues to develop rapidly. Kualanamu International Airport, which serves domestic and international flights, as well as various star-rated hotels and convention centers such as the Grand Mercure Medan Angkasa Hotel, JW Marriot, Adi Mulia, Santika Premiere Dyandra Hotel & Convention Medan, and Grand Aston City Hall Hotel, have successfully hosted large-scale national and international events. These events have a high level

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of participant satisfaction, indicating that Medan has the capacity and potential to develop further as a leading MICE destination (Wijayanti, 2020).

The Medan City Government continues to support the development of this sector by improving infrastructure and promotion, such as plans to build a new convention center and improve public transportation facilities. This is expected to make Medan a more competitive and friendly destination for global MICE events. Moreover, Medan has also shown progress in adopting a hybrid format, which is increasingly important post-pandemic to improve efficiency and expand the reach of MICE events (Asmoro. 2025).

Behind this great potential, there are several major challenges faced by Medan in sustainable MICE management. One of them is air pollution, which is a major problem in the city center, where vehicle emission levels often exceed the thresholds set by the World Health Organization (WHO). The impact of this pollution not only affects public health but also the comfort of MICE event participants (Fajriaty et al., 2025). In addition, chronic traffic congestion in Medan also hinders the mobility of event participants, which affects operational efficiency and the quality of the event experience (Eddyono & Ferdian, 2024).

The use of fossil fuels, which still dominates the MICE sector, also adds pressure on the environment. Although there have been several efforts to switch to renewable energy, such as the biomass power plant initiative by PLN Indonesia Power, the transition is still limited (Misbahuddin et al., 2024). Similarly, waste management, especially food waste and single-use plastics generated by MICE events, remains a major challenge for the city of Medan (Putri, 2022).

Medan, as a multi-ethnic city, has cultural diversity that is one of the main attractions for the MICE sector. The unique cultures of the Batak, Malay, Chinese, and others enrich the experiences of tourists and event participants. However, there is a potential risk of commodification of local culture, where local culture is overly packaged for commercial purposes, reducing the authentic value of the culture and creating dissatisfaction among the local community.

In addition, social conflicts may arise along with the growth of the MICE sector, which brings dynamic changes to the social and economic structure of the community. The unequal distribution of economic benefits between large businesses and local SMEs can cause social tensions. Therefore, the active involvement of the local community in the planning and implementation of MICE activities is very important to ensure fair social and cultural sustainability (Lashitew et al., 2024).

At the global level, the development of the tourism sector, including MICE, increasingly emphasizes sustainability through ESG principles. ESG principles are an important part of sustainable tourism policies, which prioritize environmental impact management, improved social welfare, and transparent and accountable governance (Airawaty et al., 2025). Although the application of ESG in the MICE sector in Indonesia is still limited, the government and industry players are beginning to show their commitment by adopting sustainability principles to increase competitiveness and attract investment, as reflected in the efforts made by the Ministry of Tourism and Creative Economy.

Digitalization is one of the main trends driving efficiency and reducing environmental impact in the MICE industry. Digital technology enables the organization of hybrid and virtual events that reduce the need for physical travel, thereby minimizing the carbon footprint of events, expanding market access, and optimizing operational costs (Fajriaty et al., 2025). In Medan, the application of this technology is still limited, so a phased approach is needed to integrate green and digital technologies more broadly in the MICE sector.

Medan has significant structural advantages to support the MICE industry, including the presence of Kualanamu International Airport, the availability of star-rated hotels, and a variety of adequate convention and exhibition venues. These infrastructure advantages place Medan in a strategic position as a MICE hub in western Indonesia. Thus, the national MICE growth trend, coupled with the readiness of local facilities, provides a strong empirical basis for projecting Medan as a competitive and rapidly growing MICE destination.

The local context of Medan City benefits from around 200 annual MICE events that generate an economic contribution of around IDR 1.5 trillion. The MICE infrastructure in Medan is relatively complete with a variety of star-rated hotel facilities that can accommodate thousands of participants. However, challenges remain, including a lack of sustainable facilities and low ESG awareness, as well as limited green technology in local venues. This research promotes an implementation checklist as a practical and measurable guide, with the potential to develop a carbon emissions monitoring prototype for local

venues. Alignment with global standards such as GSTC positions Medan in the context of Southeast Asian and global competition, opening opportunities for increased competitiveness and the development of environmentally friendly, socially inclusive, and well-regulated MICE.

This comprehensive approach demonstrates that the successful development of sustainable MICE destinations requires cross-sector collaboration and continuous innovation, positioning the MICE industry in Medan not only as an economic driver but also as a model for responsible and sustainable tourism development.

Although the number of MICE events in Medan continues to increase, sustainability management still faces various challenges. Key issues include air pollution, traffic congestion, fossil fuel dominance, suboptimal waste management, and cultural commodification that has the potential to diminish local social and cultural quality. Other problems include high carbon emissions, accreditation management that is often symbolic in nature, and limited implementation of ESG in practice (Speed *et al.*, 2022).

Medan has great opportunities to develop sustainable MICE, supported by continuously developing infrastructure, government commitment, and the adoption of digital technology and renewable energy initiatives. The empowerment of local communities and SMEs also has great potential to strengthen an inclusive and sustainable MICE model (Purnomo *et al.*, 2024). The global trend requiring the application of ESG principles as industry standards further reinforces the urgency to develop more environmentally friendly and sustainable MICE destinations in Medan.

Incremental innovation refers to gradual changes made to improve products, services, or processes without involving radical changes. This approach focuses more on consistent and sustainable small improvements, which cumulatively produce a big impact. Incremental innovation is often used in organizational contexts to gradually improve efficiency and quality, as applied in the Kaizen philosophy, which emphasizes the importance of continuous improvement in every aspect of operations (Putri, 2020).

In the context of MICE in Medan, with its diverse facilities, accommodations, and infrastructure potential, such as Kualanamu Airport and dozens of venues and hotels, this practice can be seen in the digitization of registration services, waste management optimization, and the use of low-emission technology in daily events.

Furthermore, this study emphasizes that incremental innovation is not enough if it only focuses on technical efficiency. This is because the global direction of tourism now demands the integration of ESG principles: Environment, Social, and Governance to create broad and sustainable benefits (Rokkhaniyah *et al.*, 2025). Empirical evidence from Indonesia, such as research on the implementation of sustainability principles in the national MICE industry, shows that concepts such as green meetings, green supply chains, and sustainable innovation are beginning to be applied and have great potential to be adapted at the local level (Setyabudhi *et al.*, 2025).

At the city level, the MICE destination development strategy model in Medan proves the need for innovation that not only improves facilities and competitiveness but also pays attention to social cohesion and governance (Nurhidayati *et al.*, 2025). ESG integration enables innovative approaches, such as the use of energy-efficient venues (Environmental), the involvement of local communities and MSMEs in the implementation (Social), and transparency and accountability through sustainability reporting (Governance).

Furthermore, studies on social identity in MICE events in Medan show that community involvement through social awareness increases the implementation of sustainable practices, even though not all factors have a significant direct influence on participation (Suharto *et al.*, 2024). This highlights the importance of local social and cultural aspects as the foundation for the implementation of ESG-based incremental innovation.

The incremental innovation method that has been applied in the development of MICE (Meeting, Incentive, Conference, Exhibition) tourist destinations in Indonesia generally refers to a gradual improvement and development approach that focuses on partial and sustainable improvement of destination attributes without making radical changes.

In the context of MICE destination development in several major Indonesian cities such as Medan, this incremental method usually includes the improvement and strengthening of four main destination attributes: 1. Attractions: improving the quality of tourist attractions that can be used as attractions for MICE events, whether cultural, natural, or man-made attractions. 2. Amenities: providing facilities

and infrastructure to support MICE events, such as hotels, restaurants, and adequate communication technology. 3. Accessibility: improving transportation access to and within the destination so that MICE participants can easily reach the event location. 4. Additional services: Enhancing supporting services, including trained human resources and logistics services.

Participant satisfaction levels are one of the key indicators in measuring the success of MICE events and destinations. In addition, incremental innovation is also carried out by gradually improving the capacity of MICE professionals, quality infrastructure, and accommodation facilities, as seen in MICE development practices in several other cities such as Jakarta, Yogyakarta, and Cirebon, where continuous improvements are aimed at adapting to MICE market needs while still considering economic and socio-cultural sustainability.

In general, the incremental innovation method in this context is a step-by-step development that involves small but consistent improvements and innovations in infrastructure, services, marketing, and governance that can support MICE destinations to be more competitive at the national and international levels.

This development aims to create destinations that are capable of attracting business tourists and hosting large-scale events, while maintaining social, economic, and environmental sustainability. In this context, sustainable MICE destinations must integrate sustainability principles into all aspects of their operations, from waste management to local community empowerment and the use of environmentally friendly energy.

The ESG (*Environment, Social, and Governance*) perspective in this study refers to the framework used to assess sustainability and social impact as well as governance in the development of MICE tourism destinations. The MICE industry is one of the fastest-growing tourism sectors with the highest economic value globally. Medan, as a developing MICE destination, has significant potential to adopt a sustainable development approach based on ESG (Environment, Social, Governance). This approach serves as a conceptual framework for research aimed at identifying and implementing additional innovations to promote the development of sustainable MICE destinations in Medan.

In the social aspect, sustainable MICE development must empower the local economy through the integration of MSMEs into the supply chain, capacity building for business actors, the creation of quality jobs, and the fair distribution of economic benefits. The preservation and promotion of local culture are also integrated into the MICE experience to maintain cultural authenticity while increasing participant satisfaction. Universal and inclusive facility design, along with gender equality and diversity, are key considerations for expanding access and markets. Health, safety, and well-being aspects are also prioritized for the productivity and comfort of participants and workers.

In governance, a sustainable policy structure, incentives, standards, and regulations that are aligned with global standards serve as the foundation. Multi-stakeholder collaboration, involving the government, private sector, community, and other relevant parties, strengthens the effectiveness of implementation. Transparency in ESG reporting, impact measurement systems, and independent audits increase trust and competitive advantage. The ability to innovate and adapt to climate change and crises ensures the long-term sustainability of MICE objectives (Bantulu et al., 2025).

Environment refers to efforts to reduce negative impacts on nature, such as waste management and efficient energy consumption. Social includes empowering local communities and improving social welfare through their involvement in the MICE sector. Governance includes the principles of transparency, accountability, and ethics in the management of the MICE sector. In the context of this study, ESG is used to evaluate the extent to which the MICE sector in Medan can operate sustainably and contribute to the long-term sustainability of the city (Silaen et al., 2025).

Incremental innovation is an important adaptive strategy, especially for small and medium-sized enterprises (SMEs) that face resource constraints in responding to market opportunities. Unlike radical innovation, which is disruptive and requires major changes in organizational structure or systems, incremental innovation focuses on gradual improvements to existing products, services, or processes, such as operational efficiency, feature additions, or quality improvements.

In the context of tourism destination development, including MICE destinations in Medan City, incremental innovation is more relevant because it can be implemented gradually and adapted to complex social, economic, and local governance conditions. This approach is also safer in terms of risk and more open to multi-stakeholder participation, as well as being in line with ESG principles that emphasize environmental responsibility, social values, and good governance (Purwanto, 2024).

The success of developing a sustainable MICE destination is highly dependent on close collaboration between local governments, the private sector, and civil society in formulating policies that support responsible tourism practices. This study is expected to produce strategic recommendations that can help stakeholders improve Medan's competitiveness as a sustainable and attractive MICE destination for both domestic and international businesses.

The urgency of this research arises from the fact that sustainability practices in the MICE industry are often still symbolic and used as a tool for legitimacy without real implementation. Many destinations and industry players claim to apply sustainability principles, but there has been no significant change in energy management, waste reduction, and local community involvement. Collaboration among stakeholders such as the government, private sector, academics, and civil society remains weak, with local communities often merely observers rather than active actors. This risks creating social inequality and contradicts the principles of inclusive tourism.

This research will refer to case studies of MICE events that have taken place and are currently taking place in Medan to understand the application of ESG (*Environmental, Social, and Governance*) principles in the local context. Although Medan has great potential as a MICE destination, the main challenges it faces are the lack of comprehensive adoption of sustainability practices, such as suboptimal waste management, inefficient energy use, and limited involvement of local communities in event organization (Halim, 2025).

Previous studies emphasize the importance of innovative approaches in developing sustainable tourism destinations. Tölkes et al. (2022) state that the application of ESG principles in the tourism sector is not only an option but a strategic necessity to support the sustainability of destinations and increase stakeholder confidence. A study by UNEP and UNWTO (2023) underscores the importance of ESG in strengthening the resilience of the tourism sector post-COVID-19 pandemic. The relevance of this research is further strengthened by the social and ecological complexities inherent in Medan as a MICE destination.

The collaborative approach based on the Pentahelix model demonstrates the importance of partnerships between academics, government, industry, media, and the community in tourism destination development. This study reinforces the theoretical foundation of this research, which combines six main theories and SWOT analysis. With this combination of methodologies, this study aims to form a responsive, adaptive, accountable, and sustainable incremental innovation model to support the development of MICE destinations in Medan from an ESG perspective.

This study aims to formulate an incremental innovation model in the development of sustainable MICE in Medan, by integrating sustainability principles that cover environmental, social, and economic aspects, in accordance with the *Triple Bottom Line (Profit, People, Planet)* (Jeurissen, 2000), ESG (*Environmental, Social, and Governance*) (Businesses, no date), and SDG (*Sustainable Development Goals*) (Back, 2024) (Elkington, 1997). Sustainability in MICE in Medan is seen as a journey of paradigm transformation that opens up opportunities for this industry to grow sustainably, with reference to SDG goals such as decent work (Goal 8), zero waste (Goal 12), and Pentahelix partnerships (Goal 17) (United Nations, 2015). This study aims to identify opportunities, challenges, and innovation strategies in the development of MICE destinations in Medan, by adopting ESG principles, thereby enriching tourism literature and serving as a reference in the formulation of sustainable regional development policies.

Research Method

A qualitative approach was used to explore the implementation of sustainability in MICE through an in-depth understanding of stakeholder practices (Creswell, 2023). This study focuses on a reflective cycle involving cross-sector collaboration to address local issues, such as waste management and energy consumption, supporting the development of applied solutions such as ESG checklists. This research was conducted in Medan, the capital of North Sumatra Province and the third-largest city in Indonesia, which plays a strategic role as a center of trade and tourism in Western Indonesia. As an economic, governmental, and tourism hub, Medan has developed into a prime destination for MICE (Meeting, Incentive, Convention, and Exhibition) events, supported by continuously developing infrastructure, including Kualanamu International Airport and a network of toll roads connecting various cities in North Sumatra.

This study focuses on star-rated hotels in the city of Medan that provide ballroom facilities and large meeting rooms, as well as leading convention centers such as Santika Premiere Dyandra Hotel

& Convention Medan, Grand Mercure Medan Angkasa, and Selecta Convention Hall. This study aims to analyze the synergy between MICE stakeholders in Medan in promoting incremental innovation and overcoming sustainability challenges in environmental, social, and governance dimensions, with an emphasis on the adoption of ESG-based practices. Medan is also equipped with 43 star-rated hotels, most of which have facilities that support MICE activities, making it a potential location for the growth of the MICE industry in western Indonesia.

Primary data in this study were collected through a combination of in-depth interviews, participatory observation, and focus group discussions (FGD). Meanwhile, secondary data in this study included relevant documents and literature. Informants in this study were determined using purposive sampling, which is a deliberate selection based on specific criteria in line with the research objectives. This technique was chosen because it allows researchers to obtain in-depth information from individuals who have experience, knowledge, or direct involvement in the development of sustainable MICE destinations in the city of Medan.

The criteria for including informants included: (1) key stakeholders from the pentahelix elements (academics, business/hotels, community, government, and media/investors), (2) having been actively involved in MICE activities in Medan City for at least the past three years, and (3) understanding sustainability issues related to environmental, social, and governance (ESG) dimensions. This approach aims to ensure the depth and relevance of the data obtained to the research focus.

Data analysis will follow the systematic thematic analysis approach recommended by Braun and Clarke (2021) for qualitative research with a practical orientation. The analysis tools used, both manual and digital (such as NVivo), are designed to capture the complexity of the phenomena of incremental innovation and ESG in the development of Medan City's MICE destination. Data analysis supports the evaluation of the action cycle.

Research Results

Existing Conditions of MICE Destination Development in Medan City

The results of observations and interviews show that Medan City has great potential for MICE (Meeting, Incentive, Convention, and Exhibition) development due to its strategic position as the gateway to Sumatra and the regional economic center. Infrastructure such as star-rated hotels, convention centers, and air transportation, is relatively adequate. However, most MICE activities are still oriented towards short-term economic aspects and are not yet integrated with sustainability principles.

Table 1. Results of SWOT Analysis of MICE Development in Medan

Factors	Description of Field Findings
Strengths	Complete MICE infrastructure (hotels, airports, international venues); local government support; strategic location in North Sumatra.
Weaknesses	Low ESG awareness; suboptimal waste management; weak cross-sector coordination.
Opportunities	Global green meeting trend; potential for SME collaboration; national policy support for sustainable MICE.
Threats	Competition with Jakarta and Bali; urban pollution; social and cultural inequality due to commercialization.

Based on the SWOT analysis in Table 1, the main strengths of MICE development in Medan lie in the availability of accommodation facilities, local government support, and the tourism industry network. Meanwhile, the main weaknesses include low awareness of ESG standards among industry players, a lack of regulations on environmentally friendly events, and limited coordination between stakeholders. In terms of opportunities, there is a global trend towards green meetings and responsible tourism that can be exploited. The main threats come from the level of competition with other cities such as Jakarta and Bali, as well as vulnerability to environmental issues such as waste and traffic congestion during major events.

Identified Incremental Innovations

Innovation in the development of MICE destinations in Medan is essentially still incremental, carried out gradually through improvements to existing systems and practices. Based on interviews with MICE industry players, several forms of innovation were identified that illustrate a shift towards sustainable practices, in terms of technology, social aspects, and the environment.

Table 2. Incremental Innovation Results

Field of Innovation	Examples of Practices in Medan	Related ESG Aspects
Event Digitalization	Online registration, e-ticketing	Governance (transparency), Environment (paperless)
Local Products	Souvenirs & catering from local MSMEs	Social (community empowerment)
Waste reduction	Use of refillable cups, bottle recycling	Environment
Human Resource Training	Green hospitality and event certification	Social and Governance

Table 2 shows the results of incremental innovation. One notable area of innovation is the digitization of services, where hotels and event organizers have begun to adopt online registration systems, e-ticketing, and social media-based promotions to reduce paper consumption. These efforts not only improve operational efficiency and governance transparency but also contribute to reducing paper waste (environment/paperless).

In addition, there are innovations in the use of local products as part of a social sustainability strategy. Several events in Medan have begun to replace imported souvenirs with products from local MSMEs, as well as utilizing catering services based on local ingredients. This step strengthens the economic empowerment of local communities and supports the social aspect within the ESG framework.

From an environmental perspective, waste reduction practices are also beginning to be implemented, for example, through the use of refillable cups and recycling of beverage bottles in MICE activities. Although still limited in scale, this policy demonstrates an increase in the awareness of industry players regarding the importance of resource efficiency and responsible waste management.

Meanwhile, the local government and hotel associations have initiated a Green Hospitality training program that emphasizes energy efficiency, waste management, and the implementation of sustainable event certification. This activity reflects the collaboration between social and governance aspects, as it not only increases human resource capacity but also strengthens commitment to sustainability standards.

Overall, these innovations show that the transformation towards a sustainable MICE destination in Medan is taking place gradually and adaptively. Although its implementation is not yet uniform and still depends on the initiatives of certain individuals or institutions, the direction of this change shows real progress in integrating ESG principles into business tourism industry practices at the local level.

Integration of ESG Principles in MICE Development

ESG integration in Medan is still in its early stages but has already shown positive developments.

Environmental Aspects:

Most MICE stakeholders are beginning to recognize the importance of waste management and carbon emission reduction. Several hotels have implemented waste segregation systems and eco-friendly amenities. However, there are no city standards that require the comprehensive implementation of green event management.

Social Aspect:

Positive social impacts have emerged from increased local community participation. MSMEs are involved as providers of culinary services, souvenirs, and event decorations. In addition, MICE activities

are beginning to be directed towards promoting local culture, thereby encouraging a sense of community ownership of tourism.

Governance Aspect:

MICE development governance is beginning to move toward a collaborative approach through inter-agency forums involving the Tourism Office, Bappeda, and business actors. However, coordination between actors remains weak due to the absence of a standardized ESG performance reporting system.

Actor Collaboration in the Pentahelix Model

Field findings show that cross-sector collaboration has begun to take shape, but is not yet optimal. The Medan City Government acts as a regulator and facilitator, while academics play a role in research and the development of sustainability indicators. Industry players (hotels, event organizers, travel agents) are the main drivers of innovation implementation, while the media plays a role in destination promotion and public awareness campaigns. Local community involvement is increasing, especially through creative economic activities and micro-enterprises. However, this collaboration model still requires systematic coordination and evaluation mechanisms to prevent overlapping roles between institutions.

Formulation of an ESG-Based Incremental Innovation Model

Based on a synthesis of field results and theoretical analysis, this study produced an ESG-based incremental innovation model consisting of three main stages:

Initiation Stage

Strengthening ESG awareness among MICE stakeholders through education, workshops, and the development of a *simple ESG checklist* to assess the readiness of each stakeholder.

Incremental Implementation Stage

Gradual implementation of environmental innovations, such as plastic reduction, ticket digitization, and *green procurement* by event organizers. At this stage, the local community is involved as partners in the production and marketing of environmentally friendly products.

Consolidation and Governance Strengthening

Establishment of the *Medan MICE ESG Forum* as a coordination platform for Pentahelix actors. This forum is tasked with developing sustainability reporting guidelines and monitoring the implementation of ESG indicators.

This model is adaptive and accountable, allowing it to be integrated into Medan City's sustainable tourism development policies. Thus, MICE development is not only profit-oriented but also considers the balance between *People, Planet, and Profit*.

Discussion

Transformation Toward Sustainable MICE Tourism through Incremental Innovation

The research findings show that innovation in the MICE sector in Medan City is incremental, characterized by a series of gradual changes rather than radical transformation. This is in line with Bessant & Tidd's (2014) view that incremental innovation emphasizes continuous improvement of existing processes, products, and systems. In the context of Medan, this approach is more realistic because most industry players are still in the early stages of understanding sustainability.

Gradual innovations such as digitization of registration, use of local products, and energy efficiency reflect a form of continuous improvement that is relevant to local human and financial resource capacities. This gradual approach has proven to be more effective in building a culture of sustainable innovation than the application of disruptive innovation, which requires large investments and high technological readiness. Thus, incremental innovation becomes a mechanism for transitioning to environmentally friendly and socially oriented MICE governance.

Integration of ESG Principles in MICE Destination Development

The integration of *Environmental, Social, and Governance (ESG)* principles in MICE development in Medan shows that sustainability cannot be separated from business ethics and good governance.

From an environmental perspective, field findings show the implementation of *green event practices* such as plastic reduction and waste management. These practices support the concept of *eco-efficiency* as proposed by Elkington (1997) in the *Triple Bottom Line*, where environmental efficiency is an important factor in maintaining long-term profitability.

From a *social* perspective, the involvement of MSMEs and local communities in MICE activities contributes to community empowerment, economic distribution, and the preservation of local cultural identity. This is in line with SDGs goals 8 and 12, which emphasize decent work and sustainable consumption and production (United Nations, 2015).

Meanwhile, from a governance perspective, the synergy between local governments, business actors, and communities reflects the first steps towards collaborative governance. Although coordination is still weak, the existence of cross-sector communication forums indicates a growing collective awareness of accountability and transparency in the MICE industry. Thus, the implementation of ESG in Medan shows a pattern of institutional learning towards more mature sustainability practices.

Pentahelix Synergy as a Collaborative Governance Mechanism

The Pentahelix concept has proven to be relevant in strengthening the governance of MICE development in Medan. The results of the study show that collaboration between government actors, academics, businesses, communities, and the media is still partial, but is beginning to form a pattern of functional cooperation. These findings support the view of Rahman et al. (2025) that the effectiveness of tourism development is highly dependent on the success of building collaborative networks across actors.

In the context of Medan, the government acts as a policy facilitator, academics as providers of knowledge base and sustainability evaluation, industry as implementers of innovation, the community as beneficiaries, and the media as drivers of public awareness. This multi-stakeholder interaction is in line with the theory of Collaborative Governance (Ansell & Gash, 2008), which emphasizes the importance of communication, trust, and participation in the joint decision-making process. Although coordination barriers remain, this collaborative pattern can serve as the foundation for the formation of an inclusive MICE management system that is adaptive to global environmental dynamics. The Pentahelix model functions as a "social engine" that drives transformation towards ESG-based sustainable governance.

Implications for Regional Development and Policy

The application of the ESG-based incremental innovation model has strategic implications for regional development policy. First, in terms of environmental policy, local governments can formulate Green MICE Guidelines that regulate waste management, renewable energy use, and carbon emission assessments in event activities. Second, from a social and economic perspective, incentive policies for event organizers that involve local MSMEs and environmentally friendly products can improve community welfare while strengthening Medan's image as an ethical destination. Third, in terms of governance, it is necessary to establish the Medan MICE ESG Forum to serve as a cross-sector coordination body. This forum is tasked with integrating ESG indicators into tourism planning, overseeing the implementation of sustainability principles, and facilitating ESG performance reporting for industry players. This step not only strengthens transparency but also makes it easier for investors to assess the city's commitment to sustainability. With the right policies, this model can strengthen Medan's position as a sustainable MICE destination at the national and even international levels, while contributing to the achievement of the SDGs, particularly goals 8 (Decent Work), 12 (Sustainable Consumption and Production), and 17 (Partnerships for the Goals).

Conclusion

The transformation towards sustainable MICE tourism in Medan is taking place through incremental innovation, rather than radical transformation. A gradual approach involving process digitalization, the use of local products, and energy efficiency has proven to be more in line with local human and financial resource capacities. This strategy is effective in building a culture of sustainable innovation and serves as a mechanism for transitioning towards environmentally friendly and socially oriented MICE governance. The integration of Environmental, Social, and Governance (ESG) principles shows that sustainability is not only about the environment but also business ethics and governance. The implementation of green event practices supports environmental efficiency, the involvement of MSMEs strengthens social empowerment, and cross-sector synergies reflect the first steps towards transparent and accountable collaborative governance. Furthermore, the application of the Pentahelix

concept, which involves the government, academia, business, community, and media, forms the basis for collaborative governance in sustainable MICE development. Although collaboration is still partial, this multi-stakeholder interaction shows a positive direction towards an inclusive and adaptive management model in line with the theory of Collaborative Governance. Strategically, the application of ESG-based incremental innovation has important implications for regional development policies. Local governments are advised to develop Green MICE Guidelines, provide incentives for industry players involving MSMEs and environmentally friendly products, and establish the Medan MICE ESG Forum as a platform for cross-sector coordination. With the right policies, Medan has the potential to become a sustainable MICE destination on a national and international scale, while contributing to the achievement of SDGs 8, 12, and 17.

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