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Elaborating the Singapore's Sustainable MICE Industry Initiatives through ESG Framework

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Abstract

Singapore, a resource-limited city-state, boosts its competitiveness through economic policies to enhance its global competitiveness, especially in tourism and the MICE sector. However, MICE events generate significant waste, energy consumption, and pollution. Therefore, the government has refined its efforts to promote sustainability within the MICE industry. The research type is qualitative and uses evaluation research approach. Using secondary data and employing document analysis, driven by the research question, to evaluate the implementation of Singapore's sustainable MICE initiatives and uses data from Sands Expo & Convention Centre to assess real-world application. Findings reveal that while sustainable MICE initiatives address key ESG domains to reduce resource exploitation, but challenges and gaps remain. In the environmental domain, issues like the cost of sustainable implementation and carbon emissions reduction persist. In the social domain, government efforts in promoting diversity, equity, and inclusion appear promising but require follow-up actions for long-term success. In the governance domain, Singapore has a clear structure but shows a strong top-down planning pattern that covers all aspects of Singapore's MICE and tourism policy, limiting stakeholders' ability to act freely as decisions are directed from the top. Additionally, purpose-built venues like Sands Expo & Convention Centre easily comply with sustainability standards, while other venues must adapt to meet the governments requirements.

Keywords: Sustainable, MICE Industry, ESG Framework

Abstrak

Singapura, sebuah negara kota yang memiliki keterbatasan sumber daya, meningkatkan daya saingnya melalui kebijakan-kebijakan ekonomi untuk memperkuat daya saing globalnya, terutama di sektor pariwisata dan MICE (Meetings, Incentives, Conventions, and Exhibitions). Akan tetapi, penyelenggaraan acara MICE menghasilkan limbah dalam jumlah signifikan, konsumsi energi yang besar, dan polusi. Oleh karena itu, pemerintah telah menyempurnakan upayanya untuk mendorong keberlanjutan dalam industri MICE. Jenis penelitian ini adalah kualitatif dengan menggunakan pendekatan penelitian evaluasi. Penelitian ini menggunakan data sekunder dan menerapkan analisis dokumen, yang didorong oleh pertanyaan penelitian, untuk mengevaluasi implementasi inisiatif MICE berkelanjutan Singapura serta memanfaatkan data dari Sands Expo & Convention Centre untuk menilai penerapannya di dunia nyata. Hasil penelitian menunjukkan bahwa meskipun inisiatif MICE berkelanjutan telah menyasar domain-domain utama Lingkungan, Sosial, dan Tata Kelola (ESG) untuk mengurangi eksploitasi sumber daya, tetapi tantangan dan kesenjangan masih tetap ada. Dalam domain lingkungan, isu-isu seperti biaya implementasi berkelanjutan dan upaya pengurangan emisi karbon masih

menjadi persoalan. Dalam domain sosial, upaya pemerintah dalam mendorong keberagaman, kesetaraan, dan inklusi (diversity, equity, and inclusion) tampak menjanjikan, namun memerlukan tindakan lanjutan untuk keberhasilan jangka panjang. Dalam domain tata kelola, Singapura memiliki struktur yang jelas namun menunjukkan pola perencanaan yang kuat dari atas ke bawah (top-down) yang mencakup seluruh aspek kebijakan MICE dan pariwisata Singapura. Hal ini membatasi kemampuan para pemangku kepentingan untuk bertindak secara leluasa karena berbagai keputusan ditentukan dari tingkat atas. Selain itu, tempat penyelenggaraan (venue) yang memang dibangun khusus seperti Sands Expo & Convention Centre dapat dengan mudah mematuhi standar keberlanjutan, sementara venue lainnya harus beradaptasi untuk memenuhi persyaratan yang ditetapkan pemerintah.

Kata Kunci**:** Keberlanjutan, Industri MICE, Kerangka Kerja ESG

INTRODUCTION

Singapore is a small city-state with no significant natural resources to exploit (Mike Leu & Chung Ko, 2012). Therefore, it has limited availability and lacks of natural resources, making the construction of sustainable energy generators challenging and driving the country to become export-oriented (Firhan, 2023). However, it has a good geographical location and deep natural harbour which made the state as the entrepot trade centre around the region. Thus, since 1959, the ruling People's Action Party has emphasized economic development to tackle unemployment and stagnation. Moreover, the Singapore government has been initiating diverse economic policies to enhance Singapore's competitiveness through innovative industrialization policies, prioritizing infrastructure development, attracting foreign investment, and developing its tertiary industry, tourism (Mike Leu & Chung Ko, 2012).

The development of the Singapore tourism sector began since 1964 marked by the establishment of Singapore Tourism Promotion Board (STPB), which name changed into Singapore Tourism Board (STB) in 1997 (Ho, 2015). 15 years later after the establishment of STB, in 1979, Singapore government established a trade association, SACEOS, to aim at retaining the status as Asia-Pacific region's attractive destination through MICE (meetings, incentives, conventions, and exhibitions) and events industry. SACEOS (Singapore Association for Convention & Exhibition Organisers & Suppliers) legally established under the Constitution of the Singapore Association of Convention & Exhibition Organisers & Suppliers (SACEOS) of Singapore. The association works closely with government bodies such as STB and ESG (Enterprise Singapore), industry players, universities, regional and global industry associations (SACEOS, 2020).

Singapore's breakthrough in the MICE industry started from Singapore recognition as the sixth leading city that hosted international meetings in 1996 by the Union of International Associations (UIA). However, research conducted by Lew and Chang in 1999 stated that this recognition was because of the regional meeting instead of annual internationally recognized events. On the other hand, Singapore's MICE industry may become less dominant due to the regional competition in the Asia Pacific region (de-hubbing). The country is aware of these evolving-patterns and is actively working to create a better future for its people. Nevertheless, by providing better MICE facilities, Singapore could boost its MICE global competitiveness (global hubbing), as well as regaining its competitiveness at regional level (Lew & Chang, 1999).

Thus, Singapore invested in infrastructure development by establishing several key infrastructures to become a global city including Changi Airport in 1981 (SG101, 2024), Suntec Convention Centre in 1995 (Suntec Singapore, 2017), and Singapore Expo in 1999 (Singapore EXPO, 2023). Then, in 2005, the government took an ambitious

policy initiative to boost its competitiveness towards global city goals including its tourism and MICE sector through Integrated Resorts (IRs) strategy. IRs initiative developed two Singapore areas by entrusting the development progress to the winning bidder. As a result, Marina Bay Area developed by Las Vegas Sands constructed Marina Bay Sands, while Sentosa island developed by Genting International built Resorts World Sentosa (Ministry of Trade and Industry Singapore, 2012). Regardless of the debate and discussion of the existence of two casinos in this strategy, this initiative contributes to Singapore's economy and tourism sector, as well as its MICE industry, re-hubbing its role in regional and global levels.

In the present days, Singapore is one of the leading countries in the MICE industry that represent Asia. In 2023, Singapore secured the second place on the ICCA Worldwide City Rankings (STB, 2024d). Reported by STB in 2019, the result of the MICE Economic Impact Assessment stated that the MICE industry contributed an economic value-add of 3.8 billion and 34,000 jobs opportunities (STB, 2020). Additionally, the MICE industry is estimated to experience annual growth by 7.2% between 2023 to 2032 (Firhan, 2023). However, Singapore MICE Industry contributed to a high volume of waste, huge energy consumption and pollution emission from venues.

In accordance with the National Environment Agency (NEA), STB, and SACEOS report in 2016, there were 7.8 million tonnes of waste generated and anticipated which amount would increase over time (NEA et al., 2016). Furthermore, in 2017 STB reported that the average energy consumption of venues per event was over than 70,000 kWh, 100m^3 of water usage, and created over 6,000 metric tons of carbon (Firhan, 2023). Additionally, the average venue-related carbon emissions per attendee reached 14.13 kg$CO^{2,}$ with 94% of MICE venue-related emissions coming from energy (STB, 2024e).

To address these issues, the Singapore government refines its effort to elevate its MICE Industry to a higher level by adopting sustainability concepts into its MICE industry. NEA, STB, and SACEOS actively approached, adopted, and launched a series of initiatives to achieve a sustainable and impactful industry (Firhan, 2023). Singapore has launched the MICE Sustainability Roadmap in 2022 and announced its ambitious goal to be the World's Best MICE City (STB, 2024d). Moreover, the core of Singapore's ESG strategy is the Green Plan 2030 which aims to accelerate Singapore as the city-state's national sustainable development by 2030 (ASEAN Briefing, 2024).

This research focuses on evaluating Singapore's initiatives implementation on sustainable MICE. To underscore the focus, this research elaborates the sustainable MICE practices from the decision-making progress and how it affects the actors within the industry by answering this research question do the initiatives regulate the MICE industry in addressing the three key ESG domains to minimize excessive resource exploitation?.

RESEARCH METHODOLOGY

The type of this research is qualitative and applies an evaluation research approach to assess the sustainable MICE implementation and answer the research question (Patton, 2002). Data collection utilizes secondary research techniques that make use of existing data (Ugwu & Val, 2023) and employs document analysis to code the data for extracting meaningful insights (Miles et al., 2014). This research collects and compares documents from books, journals, reports, publications, news, and reliable websites related to Singapore MICE Industry and ESG framework due to its relevance with the research topic. Furthermore, the research also uses complementary data from Singapore's venue, Sands Expo & Convention Centre, to display how the initiatives implemented in real-life practice for the research purpose. Even though the qualitative methods have limitations in providing primary data which could offer first-hand insights into answering the research question, the qualitative methods remain essential for understanding the

policy-practice gap, implementation challenges, and MICE industry trend in sustainability.

ESG (Environmental, Social, and Governance) Framework

The term of sustainable MICE defines as an efficient resource management and stakeholder within the MICE industry to achieve sustainable development in aspects of environmental, social, and economic. ESG represents three key domains known as environment, society, and governance that have a huge impact on mid to long term core values in the MICE industry known as non-financial indicators. The use of ESG concept in sustainable MICE is to assess the prospect and significance impacts on environmental, social, and governance factors through MICE events (Korea Tourism Organization, 2022). Additionally, ESG (Environmental, social, and governance) is a framework to evaluate a business's sustainability and ethical impact (ESGBC, 2024).

The concept emerged from the 1970s Corporate Social Responsibility concept that requires companies to take into account the environmental and social issues. In a nutshell, ESG pursues sustainable development through eco-friendly, socially responsible, and good governance perspectives (Korea Tourism Organization, 2022). This research adopts the ESG concept and uses the ESG key domains to collect data and summarize the key information needed for the analyses. Every domain of ESG has its own key factors for measuring MICE sustainability (see table 1).

Table 1 ESG Domain's Key Factors in the MICE Industry

Domain	*ESG Key Factors in the MICE Industry*
Environmental (E)	Carbon emissions reduction and efficient waste management
Social (S)	Human rights and community development
Governance (G)	Transparent and reliable event execution

Source: generated by the researcher based on (Korea Tourism Organization, 2022)

There are three ESG framework domains including environmental (E), social (S), and governance (G). Environmental domain emphasizes issues related to climate change, carbon emissions, and waste management caused by MICE events. Social domain highlights the importance of human rights and community development including job creation, cultural diversity promotion, and revitalization of local tourism. Lastly, Governance focuses on supporting MICE actors for realizing environmental and social values, as well as encouraging them to host transparent and reliable event execution (Korea Tourism Organization, 2022).

Driven by the research questions, all documents will be coded for analysis to interpret key meanings and findings (Miles et al., 2014). The three main domains of ESG framework utilizes as a guide to collect relevant data as mentioned above, and code the meaning behind them to assess the implementation effectiveness of the sustainable MICE.

RESULT AND DISCUSSION

Singapore Government Initiatives

According to the ESG framework domain and key factors, this study elaborates Singapore initiatives for MICE companies and actors in executing the sustainable MICE Industry (see table 2).

Table 2 Classification of Singapore's Sustainable MICE Initiatives by ESG Framework Domain and Key Factors

Domain	Key Factors	Singapore's Initiatives for MICE Industry
(E)	Carbon emissions reduction	1. The MICE Sustainability Roadmap 2022 2. Carbon and Waste Baselining Study in 2023 3. Waste Agreement 4 (WA) 4 Sustainable MICE - Guidelines for Carbon Emissions Management 2023
	Efficient waste management	1. 3R toolkit for the MICE Industry 2. Waste Agreement (WA) 3 Sustainable MICE - Guidelines for Waste Management 2023 3. Singapore MICE Sustainability Certification (MSC) 2024 4. MICE Venue Sustainability Playbook 2024
(S)	Human rights and Community development	1. Sustainability Guidelines for the Singapore MICE Industry 2013 2. Legacy toolkit 2024 3. Global Sustainable Tourism Council (GSTC) MICE Criteria 2024
(G)	Transparent and reliable event execution	1. Singapore MICE Sustainability Roadmap 2022 2. Singapore Exchange (SGX) Sustainability Reporting Guide

Source: generated by the researcher, 2025

Singapore's objection is strengthening its role as a pioneer of sustainable MICE destinations. Therefore, the country launches its global positioning campaign called the World's Best MICE City. Overall, Singapore has provided initiatives in each ESG framework domain and its key factors. The environmental (E) domain has two main key factors which are the carbon emissions reduction and efficient waste management. The initiatives for carbon emissions reduction consist of three initiatives. Meanwhile the efficient waste management factor consists of four initiatives. Next, the social (S) domain consists of one main key factor, human rights and community development, has three initiatives. Lastly, the government domain's key factor is mainly focused on transparent and reliable event execution with two initiatives.

Environmental (E)

Within the E domain in carbon emissions reduction factor, there are three initiatives. First, the MICE sustainability roadmap 2022 was developed by STB and SACEOS which aligns with Singapore's Green Plan 2030 and the United Nations SDGs. The roadmap envisions to become the Asia Pacific's leading sustainable MICE destination by 2030 through integration and collaboration. The roadmap has two focus areas: 1. circular economy by reducing, recycling, and managing waste; and 2. reducing energy and carbon emissions (Visitingsingapore, 2022). Next, the carbon and waste baselining study in 2023 focused on Energy, Water, and Waste. This study adopted international standard ISO 14068 on carbon neutrality and took a hierarchical approach. It prioritised emission reduction, removal over offsets, and offsetting residual emissions for Singapore's MICE Industry. The study findings found that the average of MICE venue-related carbon emissions per attendee is 14.13 kgCO2 which 94% of emissions comes from energy (STB, 2024e).

Lastly, Waste Agreement 4 (WA) 4 Sustainable MICE - Guidelines for Carbon Emissions Management 2023 launched to offer best practices for mitigating the potential carbon footprint caused by MICE industry and offsetting carbon credits to make up for the leftover emissions (Singapore Standard Council, 2023). This guideline is applicable across the MICE supply chain encompassing five major actors such as event organisers, venue owners and operators, event builders, food and beverage providers, exhibitors and logistics providers. It also covers the measurement, reduction, calculation, verification and offset of emitted Greenhouse Gas (GHG) (STB, 2024g).

As for the efficient waste management factor in the E domain, the 3R toolkit for the

MICE industry is provided by NEA, STB, and SACEOS. The 3R toolkit introduces things that can be reduced, reused, and recycled in establishing MICE events. For instance, the reducing point encourage for replacing paper, plastic, food, and banner to electronic app, banner, flyers, using clipped badges instead of plastic holders, serving plated food instead of buffet, donating or recycling the excess food, and not printing the dates on the banner or lanyards. Furthermore, the reusing point consists of the use of reusable cutlery, rechargeable technical equipment, reusable or recycling the booth material, and not using carpet in the venue. The recycling point encourages to recycle the used material in a venue such as cardboard and paper to be notebooks, pens, posters, or badge cards, as well as provide the recycle bins (NEA et al., 2016).

The second initiatives, Waste Agreement (WA) 3 Sustainable MICE - Guidelines for waste management, provides waste management guidance which has been effective since March 2023 for 50 or more attendees, especially for the MICE value chain actors including event organizers, venues, event builders, food and beverage providers, and exhibitors (SACEOS & SSC, 2023). The first venue to receive Singapore MICE Sustainability Certification is Sands Expo & Convention Centre in Marina Bay Sands (Marina Bay Sands, 2024b).

Next, Singapore MICE Sustainability Certification (MSC) 2024 is a framework for Singapore's MICE Industry that equips and certifies businesses for adopting sustainability standards. This certification applies for all MICE industry actors such as venues (hotel with MICE venues), event organisers, event technology and audio-visual providers, stand builders, food and beverage caterers, transport operators, and freight forwarders. The Singapore MSC Framework also covers the management approach to Carbon, Waste, Energy, Water management, Social, Human resource competency and procurement (SACEOS, 2024). Lastly, STB published MICE Venue Sustainability Playbook as one of their dedications to support MICE industry sustainability initiatives. This playbook is a comprehensive guide that offers recommendations for applying energy efficiency, waste management, and water conservation practices (STB, 2024b).

Social (S)

Within the S domain, this study focuses on the initiatives that support the Singapore Green Plan 2030 and sustainability MICE that empower the MICE actor and promote local culture. S domain of human rights and community development factor, STB launched the sustainability guidelines for the Singapore MICE Industry in 2013 for increasing the stakeholders' understanding of environmental, social, and economic issues. The guidelines act as a tool to assist the planners and suppliers in integrating the sustainability practices. Additionally, it provides checklist that contains six main points including the management approach; human resources; community; waste; energy; and water for seven MICE industry categories such as event and activity organiser; exhibition, conference and convention organiser; venue; transport; food and beverage; audio-visual; and hotel (STB, 2013). Additionally, the human rights factor has the legacy toolkit which is designed to encourage and empower the stakeholders especially the planners to frame vision, ideate initiatives, realise plans, and measure impact called FIRM framework. The legacy toolkit proposes four focus areas that an organisation can create in its early stages including sectoral, social, environmental, and economic (STB, 2024a).

Next, STB launched Global Sustainable Tourism Council (GSTC) Attraction Criteria for establishing attractions' global sustainability standards. Among three criteria of GSTC, one of them specifically made for the MICE industry entitled GSTC MICE Criteria (GSTC, 2024a). GSTC MICE Criteria was developed for Venues; and Event Organizers; and Events and Exhibitions. Additionally, it organized and elaborates four main themes including: effective sustainability planning; maximizing social and economic benefits for the local community; enhancing cultural heritage;

and reducing negative impacts on the environment (GSTC, 2024b). These initiatives empower local communities within the MICE industry to host sustainable events, promoting regional local regions and positively impacting local culture. Moreover, The GSTC MICE Criteria's section covers the promotion of diversity, equity, and inclusion which was planned thoroughly.

Governance (G)

Lastly, in the G domain of transparent and reliable event execution factor, STB and SACEOS launched a roadmap that sets out clear target and overall strategies to guide MICE industry actors for adopting unique sustainability goals. The sustainable MICE initiatives planned thoroughly on its Singapore MICE Sustainability Roadmap 2022 (Visitingsingapore, 2022). Next, the Singapore exchange (SGX) has been mandating its listed companies to publish annual reports complying with the rule or explaining why they do not comply with the rule approach since 2016. These annual sustainability reports aim to enhance the companies' accountability and transparency in managing the risk and opportunities in ESG. The ESG reports are mandatory for business sectors in financial, agriculture, energy, food, forest products, building materials, and transportation industries. Therefore, the sustainability reports must include the ESG factors; the Task Force on Climate-Related Financial Disclosures (TCFD); policies, performance, practices, and targets; sustainability and reporting framework; and board statement (ASEAN Briefing, 2024).

In this domain, Singapore has clear governance structures to support its sustainability initiatives. In 2022, STB and SACEOS established the MICE Sustainability Committee (MSComm) for raising awareness, adopting, and deepening sustainability efforts and best practices. The roadmap of MSComm lays out three broad strategies with respective specific approaches (STB, 2022). Moreover, the mandate to publish annual reports based on the ESG framework before this initiative launched shows Singapore's capability to carry and execute the sustainable MICE practices. Furthermore, the PCMA (Professional Convention Management Association) foundation of Singapore also provided four publications for supporting event organisers on their journey of starting and scaling sustainability planning events. These publications are situation analysis that summarize Singapore's sustainable MICE situation; the sustainable event starting line; event planning map; and RFP and contract language resource (STB, 2024f). Thus, in this domain the Singapore government provides clear governance structures in supporting sustainable MICE industry initiatives.

Challenges and Gaps in Sustainable MICE Implementation

While Singapore seems to have addressed all three key ESG domains through its sustainable MICE initiatives, challenges and gaps remain exist. First, in the environmental domain, particularly the cost of sustainable implementation and carbon emissions reduction. Even though Singapore will track carbon emissions baselines regularly based on aggregated data, but the data collected only from six purpose-built venues not encompassing the total or even half of overall venues in Singapore (STB, 2024e). On the other hand, the measurement of environmental impacts (especially carbon emissions) requires both technical expertise in environmental impact assessment and understanding of local contexts (Yuan et al., 2024). Thus, the cost of becoming a sustainability venue for the private venue is huge, while private venues usually regard their venue for MICE as a secondary business (Nolan, 2020). Therefore, the government hired a third party consultant for measuring the emission caused by Singapore's MICE Industry, ESC.

ESC (EnviroSolutions & Consulting), a private consultant company, supported STB by providing insights to understand and reduce emissions in Singapore MICE Industry in 2023. ESC assessed the overall environmental impact in Singapore and benchmarked performance against international best practices. The company calculated scope 1 and scope 2 emissions from energy, water,

and waste for the six purpose-built MICE venues including Sands Expo & Convention Centre, Suntec Singapore Expo & Convention Centre, Resorts World Convention Centre, Singapore Expo, Changi Exhibition Centre, and Raffles City Convention Centre (ESC, 2021). To response the measuring initiative by the government, National University of Singapore, publish a guideline for assessing carbon intensity estimation by MICE event so the event organizer can measure the carbon intensity by themselves entitled A Guide to Sustainable Events: Singapore MICE Carbon Calculator" (Yuan et al., 2024).

Furthermore, the ambitious goal for achieving net-zero emissions by 2050 and the national net-zero target appears to be beyond reach. Because, transportation is the dominant source of MICE carbon footprint, especially air travel which is responsible for over 80% of emissions (Yuan et al., 2024). There is a backlash between the goal to become the world's best MICE city and the sustainable MICE initiatives. The matter is the government's initiatives for attracting as many international tourists as they can. Meanwhile, airplane transportation is the most preferred one and the government suggests to reduce carbon emissions by taking direct flight instead of connecting flights seems to be insufficient (STB, 2024e). Because international attendee and tourist preference in choosing flight-route varies depending on their respective conditions and demand. Thus, this initiative needs further development practice such as improving Singapore airline connectivity around the world to be only direct flight. In contrast, Singapore's, 3R Toolkit, Waste Agreement (WA) 3 Sustainable MICE - Guidelines for waste management initiatives, and Singapore MICE Sustainability Certification (MSC) 2024 are strategically and comprehensively planned.

Second, in the social domain, while the government's efforts show a promising outcome in promoting diversity, equity, and inclusion, the initiatives should have included follow-up efforts to ensure long-term success. Singapore had provided guidelines, toolkit, and criteria for MICE actors so they can comply with Singapore sustainable initiatives standards. However, some kind follow-up efforts to promote, empower, and educate the MICE actors are none to be found. The government should be conducting workshops, seminars, or briefings to discuss this matter with the target of the Sustainability Guidelines for the Singapore MICE Industry 2013, Legacy toolkit 2024, and GSTC MICE Criteria.

Third, in the governance domain, Singapore has a clear governance structure for overseeing its MICE industry and running sustainability initiatives. However, these initiatives are characterized by a strong top-down planning pattern that covers all aspects of Singapore's tourism policy, limiting stakeholders' ability to act freely as decisions are directed from the top. The sustainable MICE industry efforts influence the decision-making process for every stakeholder involved within the industry. Present study has revealed a notable connection between the government and private sector. This public-private collaboration has shown a contribution to the policymaking, implementation, and development of Singapore MICE industry (Mena-Navarro et al., 2022). For instance, the construction of the Sands Expo and Convention Centre in Marina Bay, Singapore's first carbon neutral MICE venue, was handled and is managed by a private sector named Las Vegas Sands, even though the development plan of the Marina area was proposed by the government in advance.

Exploring MICE Sands Expo and Convention Centre Commitment to Sustainable MICE Practices

To gain an understanding of how initiatives are implemented by stakeholders, this research explores sustainable practices by Sands Expo & Convention Centre. Sands Expo and Convention Centre at Marina Bay Sands has become the first carbon neutral MICE venue in Singapore. The clients of this venue can conduct meetings and conferences that are 100% carbon neutral without any additional cost (Marina Bay

Sands, 2020). The venue has seven prestigious certifications form national and international institutions including EIC (event industry council) Sustainable event standards; platinum certification; BCA (Building and Construction Authority) Green Mark Platinum; LEED (Leadership in Energy and Environmental Design) Platinum Green Building Certification; ISO20121 Sustainable Events Management System Certification; ISO45001:2018 Occupational Health and Safety Management System certification; SACEOS MICE Sustainability Certification; and Gold Healthy Venue World Obesity Federation (Marina Bay Sands, 2024a). Marina Bay Sands integrates multiple attractions into one location including hotel with 1850 luxurious rooms in three towers, Sands SkyPark that connects the towers, Casino Atrium, Shoppes for 170 luxury and premium brands and 19 luxury duplex stores in the mall, Restaurants, Sands Expo and Convention Centre with 250 meeting rooms and can host 45,000 delegates, ArtScience Museum with 21 gallery spaces, Sands Theatres with 2,183 seats, MARQUEE nightclub, and Outdoor Plaza event (Marina Bay Sands, 2024a).

In this section, this study assesses whether the venue reflects a commitment to the ESG framework by examining their operational practices in energy usage, waste management practices, employee welfare, and governance. The energy saving practices are built since the construction of the venue instead of renovating it to fit into a sustainable concept. The convention centre uses sub-metering MICE floors that separates utility consumption measuring and billing on specific floors or areas. Usually, this system measures utility consumption primarily on electricity, water, and cooling such as heating, ventilation, and air conditioning. The venue installs motion sensor lights in all 250 meeting rooms which saves energy usage every year by 2.9 million kWh. It also saves energy by utilizing LED lights; programmable lighting; and air conditioning systems which make 42% energy usage more efficient. The convention centre ensures that 100% convention operations are carbon offset (Marina Bay Sands, 2019).

Furthermore, Marina Bay Sands commits to reduce carbon footprint by investing in energy efficient infrastructure. The practices consist the investment on an intelligent building management system for 25 million Dollar Singapore and has been saving 7.4 million kWh of energy annually since 2012. It also purchased an annual average of 25,000 Renewable Energy Certificates (RECs) from Sembcorp Solar (Sembcorp) from 2019 to 2022. This RECs correspond to solar electricity in various solar rooftop projects in Singapore. The convention centre invests on carbon offsets that covers 100% of carbon emissions generated from the meeting venue's gas and electricity consumption (Marina Bay Sands, 2020).

As for the waste management practices, it implements a comprehensive waste collection and recycling programme. The convention centre actively seeks opportunities to eliminate unnecessary packaging and materials. It provides recycling bins around the venue to encourage waste segregation, and a hundred elegant water filters to reduce bottle consumption and promote the use of reusable glasses and bottles (STB, 2024b). The adoption of rigorous waste management executed by recycling 50% of all operational waste including paper, cardboard, and plastics. Also, the installation of water efficient plumbing fixtures that achieves 66% water efficiency (Marina Bay Sands, 2019).

Its recycling program focuses on reducing waste and extending the lifespan of single-use materials. The convention centre introduced circular bottles made of recycled polyethylene terephthalate; serves menu cubes; uses dietary indicators crafted from repurposed chopsticks during banquets; and eliminates the need for paper products (Marina Bay Sands, 2024b). In 2023, the venue team diverted over 34,000 glass bottles to glasses by recycling collected bottles from a global wine and spirits event, Vinexpo Asia. Also, the team collected over 2,000 radios and headsets during the MDRT (Million Dollar Round Table)

Global Conference 2023 and donated them to the Migrant Workers' Centre as gifts for the migrant worker community (Marina Bay Sands, 2024b).

The venue takes special care for its food management. Chefs serves the fresh herbs and leafy greens from its on-site gardens and mobile hydroponic displays. This practice aims to strengthen food security and reduce carbon emissions from transportation that deliver these ingredients (Marina Bay Sands, 2024b). As the venue certified SG Clean as well as by Bureau Veritas, the F&B team redesigned food to be served as set lunches instead of self-service buffets (Marina Bay Sands, 2020). The purpose of the set lunches system is to minimise physical interactions and social mingling during pandemic Covid-19.

However, this kind of setting, unintentionally by the venue, aligns with the 3R Toolkit which recommends to serve plated food instead of buffets to reduce food waste. The venue has three practices to manage food waste such as providing five aerobic digesters for processing food waste into residual material; collaborating with contemporary artisans for creating products from imaginative circular material; and partnering with food bank Singapore for donating unserved safe food to vulnerable community (STB, 2024b). This act has been donated over than 17,500kg of food since 2016 (Marina Bay Sands, 2024b).

In terms of employee welfare, this study focuses on how the venue trains their staff about sustainable MICE concepts. Sands Expo & Convention Centre educates and engages their staff in sustainable practices through the practices of measuring and recycling waste for events and activities (Marina Bay Sands, 2019). Additionally, the venue trained MICE Team Members to be sustainability champions and targets to have 100 staff undergo a certification programme in 2024 namely "the Events Industry Council's Sustainable Event Professional Certificate" (Marina Bay Sands, 2024b).

Lastly, in the term of governance, Marina Bay Sands adopted the Sands ECO360 programme by Las Vegas Sands that focuses on global sustainability programs (Jung & Yoon, 2018). This guide is a model for Marina Bay Sands to execute its sustainability efforts which has been recognised in both local and international level (Marina Bay Sands, 2024b). The Singapore government has been mandated to publish an annual ESG report since 2016, even so, the ESG annual report for Marina Bay Sands started from 2019 which is not separated from the comprehensive ESG reports of the Las Vegas Sands Corporation (LVS), its parent company (Sands, 2024b). In its recent report, it stated how the parent company addresses ESG and implements its core concept of ESG in all its properties around the world including Marina Bay Sands. Its environmental commitment focuses on protecting the planet, social commitment focuses on promoting its people's well-being and supporting the community, and government commitment follows the highest standards of business conduct (Sands, 2024a).

To be precise, the LVS illustrates its governance as the core of its management which encompasses corporate culture, responsible business, and supply chain management. Then, it divides its sectors into planet, people, and communities. Each key sector has their own management focuses and subjects. Planet sector manages material resources, water stewardship, waste, and low-carbon transition and has three key subjects including the building design and development; resort management and operations; and meetings, events, and entertainment. Next, the people sector manages workforce development; diversity; equity and inclusion; supplier advancement; human rights; and responsible gaming. It has three key subjects including team members, suppliers and partners, and guests. Lastly, the communities sector manages hardship relief, community partner advancement, culture and heritage, and education. It has three key subjects which are corporate giving, capacity building, and volunteerism (Sands, 2024a).

Amidst all the achievements and successful sustainable adoption of Sands Expo & Convention Centre, it is important to note that the venue was designed and concepted to be sustainable from the beginning of its construction. As one of Singapore's purpose-built venues, both its infrastructure and management system are built to be sustainable. Its compliance with sustainability standards is not merely a result of the government's sustainable MICE initiatives introduced in 2022, it has been an integral part of the venue's purpose and concept from the start. When the government launched these sustainable initiatives, the venue was already well-aligned with the objectives, making it easier to achieve recognition. In contrast, other venues built after the initiatives were introduced must now undergo reconstruction and adapt to comply with the government's sustainability requirements.

CONCLUSION

In conclusion, sustainable MICE industry initiatives have addressed the three key ESG domains to minimize resource exploitation, but challenges and gaps remain exist. In the environmental domain, issues like the cost of sustainable implementation and carbon emissions reduction persist. In the social domain, while government efforts in promoting diversity, equity, and inclusion appear promising, follow-up actions are needed for long-term success. In the governance domain, Singapore has a clear structure for overseeing the MICE industry and its sustainability initiatives. But these efforts show a strong top-down planning pattern that covers all aspects of Singapore's tourism policy, limiting stakeholders' ability to act freely as decisions are directed from the top. Furthermore, Singapore's purpose-built venues easily comply with sustainable MICE initiatives, as sustainability was incorporated from the start such as Sands Expo & Convention Centre. In contrast, other venues built after the initiatives require reconstruction and adaptation to meet the government's sustainability standards.

REFERENCES

ASEAN Briefing. (2024). *Unlocking ESG Reporting Requirements in Singapore*. www.middleeastbriefing.com

ESC. (2021). *Carbon Emissions and Waste Study Transforms Singapore MICE Industry*. Https://Www.Envirosc.Com/Sustainability-Carbon-Emissions-and-Waste-Study-Singapore-Mice/.

ESGBC. (2024). *Environmental, Social and Governance (ESG) 101 Guide*. ESG Centre of Excellence British Coloumbia.

Firhan, M. (2023). *MICE Sustainability Singapore's Approach to Sustainable Events MICE Sustainability*. https://www.gstcouncil.org/wp-content/uploads/Mohamed-Firhan-1.pdf

GSTC. (2024a). *GSTC Attraction Criteria*. Https://Www.Gstcouncil.Org/Gstc-Criteria/Gstc-Attraction-Criteria/#:~:Text=The%20GSTC%20Attraction%20Criteria%20aims,Business%20should%20aspire%20to%20reach.

GSTC. (2024b). *GSTC MICE Criteria Performance Indicators and SDGs For Venues, Event Organizers, and Events & Exhibitions*. www.gstc.org

Ho, S. (2015). Singapore Tourism Board. In *https://www.nlb.gov.sg/main/article-detail?cmsuuid=05360b8a-1de6-4f50-9732-700ebbce9663*.

Jung, S., & Yoon, S. (2018). More Participation, Efficiency, and Consistency: The case of the Sands ECO360° Global Sustainability Strategy. *Journal of Hospitality & Tourism Cases* 6, 9-16.

Korea Tourism Organization. (2022). *ESG Operational Guide for Sustainable Development of the MICE Industry*.

Lew, A. A., & Chang, T. C. (1999). Where the World Meets: Regionalism and Globalization in Singapore's Convention Industry. *Journal of Convention & Exhibition Management*, *1*(4), 17-36. https://doi.org/10.1300/j143v01n04_03

Marina Bay Sands. (2019). *Sands Expo and Convention Centre Awarded Prestigious LEED ® Platinum Green Building Certification*. https://drive.google.com/drive/folders/1z01IcOCjq_Gw

Marina Bay Sands. (2020). *Sands Expo and Convention Centre is now a carbon neutral venue*.

Marina Bay Sands. (2024a). *Fact Sheet Marina Bay Sands*.

Marina Bay Sands. (2024b). *Sands Expo & Convention Centre is the First Venue to Receive Singapore MICE Sustainability Certification*. www.marinabaysands.com

Mena-Navarro, A., Almeida-García, F., & Cortés-Macías, R. (2022). The role of the MICE sector in Singapore's tourism policy. A historical perspective. *Journal of Policy Research in Tourism, Leisure and Events*. https://doi.org/10.1080/19407963.2022.2043880

Mike Leu, G.-J., & Chung Ko, Y. (2012). A Policy Innovation for Social and Economic Development: The Case of Integrated Resorts in Singapore. 社会システム研究, *第24 号*.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative Data Analysis: A Methods Sourceboo* (3rd Edition). SAGE Publication.

Ministry of Trade and Industry Singapore. (2012). *Key Milestones for Integrated Resorts*. Https://Www.Mti.Gov.Sg/Resources/Feature-Articles/2012/Milestones.

NEA, STB, & SACEOS. (2016). *3R Toolkit for the Meetings, Incentives, Conventions & Exhibitions Industry*. https://www.visitsingapore.com/content/dam/MICE/Global/useful-downloads/MICE_3R_Toolkit_published.pdf

Nolan, E. (2020). The supply and design of different types of venues for business events. *International Journal of Tourism Cities*, 6(4), 691-710. https://doi.org/10.1108/IJTC-11-2019-0197

Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods* (3rd Edition). SAGE Publications.

SACEOS. (2020). *Purpose of SACEOS is Unchanged 40 Years from Its Beginning*. Https://Saceos.Org.Sg/Purpose-of-Saceos-Is-Unchanged-40-Years-from-Its-Beginning/.

SACEOS. (2024). *Singapore MICE Sustainability Certification*. Https://Saceos.Org.Sg/Singaporemsc/.

SACEOS, & SSC. (2023). *National guidelines for waste management published to drive sustainability at MICE events in Singapore*. https://saceos.glueup.com/event/mice-waste-

Sands. (2024a). *2023 Environmental Social and Governance Report*.

Sands. (2024b). *Report Library*. Https://Www.Sands.Com/Resources/Reports/.

SG101. (2024). *1979 to 1984: Economic Restructuring*. Https://Www.Sg101.Gov.Sg/Economy/Growing-Our-Economy/1979/.

Singapore EXPO. (2023). *About Singapore EXPO*. Https://Www.Singaporeexpo.Com.Sg/Sg/Explore-Singapore-Expo/about-Us.

Singapore Standard Council. (2023). *Workshop Agreement Sustainable MICE-Guidelines for Carbon Emissions Management*. Enterprise Singapore.

STB. (2013). *Sustainability Guidelines for the Singapore MICE Industry*.

STB. (2020). *Safe and Gradual Resumption of MICE Events*. Https://Www.Stb.Gov.Sg/Content/Stb/En/Media-Centre/Media-Releases/Safe-and-Gradual-Resumption-of-MICE-Events.Html.

STB. (2022). *Singapore launches roadmap to become APAC's leading sustainable MICE destination by 2030; achieve net zero by 2050*. Https://Www.Stb.Gov.Sg/Content/Stb/En/Media-Centre/Media-Releases/Singapore-Launches-Roadmap-to-Become-APAC-Leading-

Sustainable-MICE-Destination-by-2030-Achieve-Net-Zero-by-2050.Html.

STB. (2024a). *Meetings for Good Building a Purposeful Legacy in Singapore*.

STB. (2024b). *MICE-Venue-Sustainability-Playbook*.

STB. (2024c). *Singapore Tourism Board Announces Initiatives that Champion a More Sustainable and Impactful MICE Industry*. Https://Www.Stb.Gov.Sg/Content/Stb/En/Media-Centre/Media-Releases/Singapore-Tourism-Board-Announces-Initiatives-That-Champion-a-More-Sustainable-and-Impactful-MICE-Industry.Html.

STB. (2024d). *Singapore Tourism Board announces initiatives that champion a more sustainable and impactful MICE industry*. www.visitsingapore.com/mice/en/plan-your-event/sustainability/mice-sustainability-roadmap/

STB. (2024e). *Sustainability*. Https://Www.Visitsingapore.Com/Mice/En/Plan-Your-Event/Sustainability/Insights-and-Publications/.

STB. (2024f). *Tourism Sustainability Programme (TSP)*. Https://Www.Stb.Gov.Sg/Content/Stb/En/Assistance-and-Licensing/Tsp.Html.

Suntec Singapore. (2017). *History & Milestones*. Https://Www.Sunteccorporate.Com/History-Milestones.

Ugwu, C. N., & Val, E. (2023). Qualitative Research. *IDOSR JOURNAL OF COMPUTER AND APPLIED SCIENCES*, *8*(1), 20-35. www.idosr.org

Visitingsingapore. (2022). *Singapore's MICE Sustainability Roadmap*. Https://Www.Visitsingapore.Com/Mice/En/Plan-Your-Event/Sustainability/Mice-Sustainability-Roadmap/.

Yuan, Y., Enerio, J., & Zhang, W. (2024). *A Guide to Sustainable Events: Singapore MICE Carbon Calculator SGFIN Whitepaper Series #3*. https://unsplash.com/photos/photo-of-