


**AN INFERENTIAL STATISTICAL ANALYSIS OF THE KEY FACTORS INFLUENCING THE ADOPTION OF NEW TECHNOLOGY BY MEEC (MICE) ORGANIZERS IN THAILAND**

Vithaya Sintharapantorn<sup>A</sup>, Amnuay Saengnoore<sup>B</sup>, Thapong Teerawatananon<sup>C</sup>, Jeffrey Alan Simcox<sup>D</sup>



ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p>Received 21 April 2023</p> <p>Accepted 18 July 2023</p>	<p><b>Purpose:</b> The aim of this study is to examine the adoption of new technology within the Meetings, Exhibitions and Conventions sector in Thailand.</p> <p><b>Theoretical framework:</b> An adapted version of the diffusion of innovation theory combined with variables from the Technology Acceptance Model (TAM) is used to define the key variables upon which data is gathered.</p>
<p><b>Keywords:</b></p> <p>MEEC; MICE; Tourism; Technology; Thailand.</p> <div data-bbox="172 1021 480 1267" style="text-align: center;">  </div>	<p><b>Design/Methodology/Approach:</b> The study reviews the MEEC/MICE sector in Thailand and its importance, the existing level of the adoption of new technology and the government plan to encourage further adoption. An online survey of 302 MEEC/MICE Organizers is analyzed using stepwise Multiple Linear regression to estimate the attitude of the organizers toward new technology and which factors have the greatest influence on their intention to adopt new technology further.</p> <p><b>Findings:</b> The results indicate that 85% of the study participants are currently adopting MEEC/MICE technological innovation in one way or another, and 99.6% are of the opinion that they will adopt it in the future. The study also indicates that the business environment, of which government policy is a major factor, can have an influence on both the attitude and the adoption intention of technology, but that their own attitude to technology is the factor with most weight and that the respondent's attitude to new technology is mostly influenced by their employees' capability.</p> <p><b>Research, practical &amp; social implications:</b> The Thai government is attempting to change the Thai economy from a manufacturing economy to a high value advanced economy. The further adoption of new technology in this important sector is a vital part of this attempt.</p> <p><b>Originality/Value:</b> The study is the first study in Thailand to use inferential statistical analysis to estimate the most important factors determining MEEC/MICE operators' adoption of new technology.</p> <p>Doi: <a href="https://doi.org/10.26668/businessreview/2023.v8i7.2681">https://doi.org/10.26668/businessreview/2023.v8i7.2681</a></p>

<sup>A</sup> MBA in Business Administration. Department of Research and Development Innovation, College of Innovation and Industrial Management, King Mongkut's Institute of Technology Ladkrabang. Lat Krabang, Bangkok, Thailand. E-mail: [vithayawilson@gmail.com](mailto:vithayawilson@gmail.com) Orcid: <https://orcid.org/0009-0002-8287-538X>

<sup>B</sup> PhD in Administration Development. Associate Professor. College of Innovation and Industrial Management, King Mongkut's Institute of Technology Ladkrabang. Lat Krabang, Bangkok, Thailand. E-mail: [amnuay.sa@kmitl.ac.th](mailto:amnuay.sa@kmitl.ac.th) Orcid: <https://orcid.org/0000-0002-2122-5685>

<sup>C</sup> PhD in Chemistry. College of Innovation and Industrial Management, King Mongkut's Institute of Technology Ladkrabang. Lat Krabang, Bangkok, Thailand. E-mail: [thapong.te@kmitl.ac.th](mailto:thapong.te@kmitl.ac.th) Orcid: <https://orcid.org/0009-0008-7859-6437>

<sup>D</sup> Doctor of Philosophy in International Marketing. Graduate School, Siam University. Bang Wa, Bangkok, Thailand. E-mail [jeff.simcox@yahoo.co.uk](mailto:jeff.simcox@yahoo.co.uk) Orcid: <https://orcid.org/0009-0005-7992-6838>

## UMA ANÁLISE ESTATÍSTICA INFERENCIAL DOS PRINCIPAIS FATORES QUE INFLUENCIAM A ADOÇÃO DE NOVAS TECNOLOGIAS PELOS ORGANIZADORES DA MEEC (MICE) NA TAILÂNDIA

### RESUMO

**Objetivo:** O objetivo deste estudo é examinar a adoção de novas tecnologias no setor de Reuniões, Exposições e Convenções na Tailândia.

**Estrutura teórica:** Uma versão adaptada da difusão da teoria da inovação combinada com variáveis do Modelo de Aceitação Tecnológica (TAM) é usada para definir as principais variáveis sobre as quais os dados são coletados.

**Concepção/Methodologia/Abordagem:** O estudo analisa o setor MEEC/MICE na Tailândia e a sua importância, o nível atual de adoção de novas tecnologias e o plano governamental para incentivar uma maior adoção. Uma pesquisa on-line de 302 MEEC/MICE Organizers é analisada usando regressão linear múltipla gradual para estimar a atitude dos organizadores em relação à nova tecnologia e quais fatores têm maior influência em sua intenção de adotar a nova tecnologia.

**Constatações:** Os resultados indicam que 85% dos participantes do estudo estão atualmente adotando, de uma forma ou de outra, a inovação tecnológica MEEC/MICE, e 99,6% são de opinião de que a adotarão no futuro. O estudo também indica que o ambiente empresarial, do qual a política governamental é um fator importante, pode ter influência tanto na atitude quanto na intenção de adoção da tecnologia, mas que sua própria atitude em relação à tecnologia é o fator com mais peso e que a atitude do entrevistado em relação à nova tecnologia é influenciada principalmente pela capacidade de seus funcionários.

**Investigação, implicações práticas e sociais:** O governo tailandês está tentando mudar a economia tailandesa de uma economia manufatureira para uma economia avançada de alto valor. A continuação da adoção de novas tecnologias neste importante setor é uma parte vital desta tentativa.

**Originalidade/Valor:** o estudo é o primeiro na Tailândia a usar análise estatística inferencial para estimar os fatores mais importantes que determinam a adoção de nova tecnologia pelos operadores MEEC/MICE.

**Palavras-chave:** MEEC, MICE, Turismo, Tecnologia, Tailândia.

## UN ANÁLISIS ESTADÍSTICO INFERENCIAL DE LOS FACTORES CLAVE QUE INFLUYEN EN LA ADOPCIÓN DE NUEVAS TECNOLOGÍAS POR PARTE DE LOS ORGANIZADORES DE MEEC (MICE) EN TAILANDIA

### RESUMEN

**Objetivo:** El objetivo de este estudio es examinar la adopción de nuevas tecnologías en el sector de reuniones, exposiciones y convenciones en Tailandia.

**Marco teórico:** Se utiliza una versión adaptada de la teoría de difusión de la innovación combinada con variables del Modelo de Aceptación Tecnológica (TAM) para definir las variables clave sobre las que se recopilan los datos.

**Diseño/Methodología/Enfoque:** En el estudio se examina el sector de los MEEC/MICE en Tailandia y su importancia, el nivel existente de adopción de nuevas tecnologías y el plan del Gobierno para alentar una mayor adopción. Se analiza una encuesta en línea a 302 organizadores de MEEC/MICE mediante regresión lineal múltiple escalonada para estimar la actitud de los organizadores hacia las nuevas tecnologías y qué factores tienen mayor influencia en su intención de adoptar nuevas tecnologías.

**Hallazgos:** Los resultados indican que el 85% de los participantes en el estudio están adoptando actualmente la innovación tecnológica MEEC/MICE de una u otra manera, y el 99,6% opina que la adoptarán en el futuro. El estudio también indica que el entorno empresarial, del que la política gubernamental es un factor importante, puede influir tanto en la actitud como en la intención de adopción de la tecnología, pero que su propia actitud hacia la tecnología es el factor que tiene más peso y que la actitud de los encuestados hacia la nueva tecnología está influida principalmente por la capacidad de sus empleados.

**Investigación, implicaciones prácticas y sociales:** El gobierno tailandés está intentando cambiar la economía tailandesa de una economía manufacturera a una economía avanzada de alto valor. La adopción de nuevas tecnologías en este importante sector es una parte vital de este intento.

**Originalidad/Valor:** El estudio es el primero en Tailandia que utiliza análisis estadísticos inferenciales para estimar los factores más importantes que determinan la adopción de nuevas tecnologías por parte de los operadores de MEEC/MICE.

**Palabras clave:** MEEC, MICE, Turismo, Tecnología, Tailandia.

## **INTRODUCTION**

The meetings, exhibitions, events, and conventions sector (MEEC) also known in Thailand by the acronym MICE (Meetings Incentives Conferences and Exhibitions) is an important contributor to the Tourism Industry in Thailand and to the Thai Economy in general. This sector has been hit by travel restrictions imposed during the COVID pandemic and as a result was forced to adapt and use technology for virtual events, as a result of the Covid experience and also the plans by the Thai Government to encourage the use of new technology in all sectors both the Thai Government and the Organizations involved in promoting MEEC activities are looking to encourage greater take-up of new technology. The aim of this study is to examine that adoption of new technology within the Meetings, Exhibitions and Conventions sector in Thailand. The Thai government is attempting to change the Thai economy from a manufacturing economy to a high value advanced economy. The further adoption of new technology in this important sector is a vital part of this attempt. The study is the first study in Thailand to use inferential statistical analysis to estimate the most important factors determining MEEC/MICE operators' adoption of new technology.

The theoretical contribution of this article is the creation of a model that can be used to gather data that can be analyzed to determine the key influential factors on the adoption of new technology in any Sector in any Country or Region, and an inferential analysis model using stepwise multiple linear regression and linear regression to rank the weight of influence of these factors on the MEEC operators intention to adopt new technology further. The key exploratory research question being what is the MICE event Organizers' attitude to the adoption of new technology and what influences their attitude and intention to adopt new technology?

## **LITERATURE REVIEW**

The meetings, exhibitions, events, and conventions sector (MEEC) referred to further as MEEC, encompasses a diverse range of industries, including tourism, hospitality, transportation, catering, and retail, all of which may provide enormous economic advantages in the form of revenue, employment, and investment as noted by Getz & Page (2015). According to the Thailand Conventions and Events Bureau (2017), not only does the MEEC industry contribute significantly to driving, strengthening, and further enhancing economic and social development on a sustainable basis, it also promotes trade, exchange, investment, and business matching while serving as an effective platform for knowledge and technology exchange. The World Tourism Organization (2015) proposes that along with economic advantages, the MEEC

sector helps a destination grow its brand, share best practices, and expand its network by facilitating the exchange of information and disseminating best practices. According to Andersson & Lundberg (2013) additionally, the spending of participants and visitors helps support jobs and expands business prospects for the local community's benefits.

Aburumman, Salleh, Omar, & Abadi, (2019) and Manzoor et al (2019) argue that the MEEC industry is recognized as a significant market segment of the tourist industry at large and was worth USD 805 billion in 2017, and it is expected to grow to USD 1.44 trillion by 2025 (7.6% CAGR from 2018-2025). Further that it also contributes to economic diversification by actively encouraging the sensible use of cultural, historical, and natural recreational resources and enabling balanced growth across the whole tourist industry. Consequently, the MEEC industry is considered a key area of growth for tourism industries around the globe, with high yield and higher than average daily expenditure per visitor. The convention and meeting sectors have developed significantly over the last decade, and nations have responded by increasing their facilities and infrastructure to capture this valuable segment of the hospitality industry. The industry consists of multiple hospitality service sectors, including lodging, food and beverage, catering, convention services, convention facility rentals, transportation, tourism, retail, and entertainment.

MEEC industries share several common characteristics with hospitality service sectors, such as inseparability of production and consumption, perishability, and seasonality. As many countries have started emphasizing the economic benefits associated with MEEC activities, they have quickly attracted commercial attention especially in Asia, where economic and trade activities experience remarkably rapid growth. MEEC events are not just worldwide attractions

but also research and economic drivers. They are large-scale, frequent international meetings that typically revolve around a single subject or business. MEEC events are primarily educational- and trade-related. In Asia, the acronym MEEC is not used commonly, rather the acronym MICE is in common parlance, standing for Meetings, Incentives, Conventions, and Except for the "I" for incentives, these activities are intended to serve as incentives and are frequently for entertainment purposes. In the MEEC market, event planners and suppliers work together to plan, organize, and execute a wide range of events. Many MEEC event experts handle everything from travel agents to creative design services to catering to marketing to logistics. The most critical MEEC events take place in global centers and need massive coordination. Businesses are drawn to the MEEC sector because these events may raise staff

productivity and morale while increasing sales and income. The national and regional economy as identified by Syah (2022) of the nation's hosting the events also gains from MEEC tourism.

Each part of the MICE acronym commonly used in Asia has its own specific traveling objectives. A meeting, according to The International Association of Professional Congress Organizers, is any number of individuals gathering in one area for a specific purpose, which can be a one-time event or recurring on a regular basis. This might involve business functions and scholarly conferences. Coordination of these meetings is a massive undertaking when working with large businesses with global operations. It might require months of preparation.

To motivate employees, companies provide them with incentive trips. The benefits in this case are gratitude for a job well done. Such incentives are used by human resources and management to raise morale, strengthen relationships and teamwork, and ultimately enhance productivity. The literature on incentive promotion is well summarized by Sood et al (2023).

Conventions are huge meetings in one location, but they are frequently part of a broader network with specific goals and themes. The sharing of information is a primary objective. Convention travel necessitates a higher degree of organization, which includes itineraries, meetings, and events for participants.

Exhibitions can be coupled with other events like meetings and conventions. Businesses showcase their products or services at exhibitions normally will be under a definite theme. They are critical for impressing and acquiring new customers. Technology and art are commonly connected with but not limited to exhibitions.

The MICE market in Asia is made up of a diverse group of experts who work on the M, I, C, and E components of the industry. Many factors must be taken into consideration, from the location of the event to the design of the logo. Business executives entrust reliable professionals, such as event planners and travel brokers, with the responsibility of creating a one-of-a-kind experience for them. Operators in the market include MICE venues and hotels, destination management companies, corporate meeting planners, incentive houses, professional conference organizers, professional exhibition organizers, event organizers, stand contractors, logistics companies, catering firms, ancillary service suppliers, and so on and so forth. The MICE industry also has its own professional private sector associations, tourism boards, and convention bureaus. Casting positivity from the global pandemic, MICE events are now mostly independent of time and location. Even if they lack geographic attractiveness, they can provide a plethora of online networking opportunities. Events held in fantastic locations offer combined benefits of tourism, education, and business opportunities. The opportunity to travel, gain

information, and have fun motivates participants. Trade and sales prospects stimulate businesses. Governments are driven by the financial benefits associated with incoming tourism. As such, MICE travel agencies have grown up in response to these compelling unique selling propositions, and many are now associated with huge enterprises.

MEEC events have been essential drivers of contact exchange and network expansion. Despite the worldwide Covid-19 pandemic's impact on the tourism industry, it's simple to visualize the future prosperity of MEEC events. With so much business and industry geared around MEEC events' both supply and demand, this industry is not going away any time soon. The pandemic, on the contrary, will make it stronger and more adaptable. The short-term financial adversaries will be offset by medium- to long-term profit outlooks. As the global economy recovers, it is critical to bring the world's best talents together in secure conditions, and the MEEC sector provides the ideal structure to do so. As a matter of fact, we will likely see a competition for locations and providers to outdo one another on health and safety measures. The MEEC industry brings together several key initiatives for modern enterprises while encouraging people and thriving economies. It is energetic and flexible, with an increasing number of specialists. There is reason to expect that this is an important area of tourism that will continue to grow.

Before the outbreak of the virus and the subsequent introduction of travel restrictions and social-distancing guidelines, the overall global MEEC industry had optimistic trends and forecasts, hence presenting a significant development opportunity for emerging economies looking to broaden their tourist offering. However, the competition was getting more intense, and the industry was becoming more and more challenging, especially with the looming era of the Covid-19 pandemic crisis which could potentially cause slower growth at least for a couple of years. In addition, the expectations of all stakeholders involved throughout the MEEC industry's whole ecosystem and network have become more and more demanding. Amid worldwide travel restrictions, social-distancing norms, and bans on major meetings, the MEEC industry has been compelled to adapt to the pandemic. According to Maital (2007), to survive and remain competitive through these challenging times, MEEC operators should start considering adapting themselves to provide services that can better meet consumers' needs and expectations and also to prepare for after the Covid-19 pandemic is over or gets alleviated and people can once start cross-border traveling again.

Brito & Pratas (2015), Jernsittiparsert & Chankoson (2019) and Sharafuddin, (2015) state that in Thailand, there are nine different types of tourism, and they are Adventure tourism;

Medical tourism, Eco tourism, Cultural tourism, Wellness tourism, Cruise tourism, Sports tourism, Educational tourism, and MICE (MEEC) tourism. Among all these, MICE (MEEC) tourism is one of the most important sectors of Thailand's hospitality industry. The success of this particular sector is driving Thailand to become the world's most successful MEEC destination, particularly in the Asian and Western regions. MEEC tourism has become one of the most impactful tourism segments in Thailand thanks to both national and international benefits. MEEC attractions garner worldwide interest by creating jobs, fostering business relationships, and enabling access to new ideas and technologies. On a local level, MEEC activities can increase investments in local tourism infrastructures and generate revenue for the local economy. Specifically, in the off or green season, MEEC events support small businesses in sharing benefits for professionals like photographers or florists. Furthermore, MEEC events promote the country on an international scale as the country organizes meetings and other activities tailored for international travelers argue Al-Ansi, Olya, & Kim (2019).

Jurakanit & Taweepornpatomkul (2019), Promsivapallop & Kannaovakun, (2020) and Bongkosh Rittichainuwat, Qu, & Brown (2001) state that the MEEC industry plays a very crucial role in Thailand's tourism sector. Already recognized as a prime tourist destination, Thailand has been developing itself into an increasingly popular location to hold international events, both product marketing, and corporate seminars. Consequently, Thailand's MEEC sector has seen strong growth in recent years. In 2018, Thailand was among one of the top four host countries in Asia, hosting the most international meetings while Bangkok was ranked as the top 10th convention city in the world (ICCA, 2018). Thailand has an image of a variety of leisure and business (bleisure) attractions, good value for money, friendly people, easy access, availability of standard venues, and a safe place to travel. In addition, B. Rittichainuwat (2011) investigated the behavior of organizers and foreign participants from various sectors, concluding that Thailand has a competitive edge over other nations in the area of staging conferences and exhibitions. These advantages include (1) diverse venues in each region of the country, (2) different climates that attract different groups to each destination, (3) a strong tourism destination with beautiful art and culture, (4) kindness and generosity towards tourists, (5) commercial strategies to attract conventions and exhibitions, and (6) value for money. The MEEC industry plays an important part in Thailand's tourism scene. Thailand, as a prime tourist location, has been developing into an increasingly popular location to hold international events, both for marketing products and holding corporate seminars. Event planning has become one of Thailand's specialties, and the MEEC industry has great potential for future

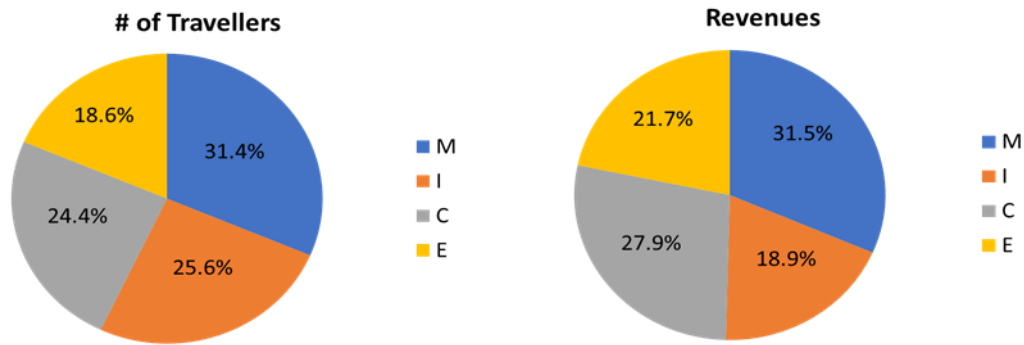
development and growth, to become a key sector in Thailand's already well-established tourism industry. Again, despite being a little behind schedule, there is no doubt that the AEC goal of "regional economic integration" will be realized, bringing with it the benefits of both enhanced regional cooperation and perhaps more significantly for Thailand's MEEC industry, increased global interest and attention to the region. Poised at the geographical center of ASEAN, Thailand is well placed to become the MEEC destination of choice in Asia and around the world. The country has the infrastructure (present and planned), the venues, the accommodation, the experienced suppliers, the skilled labor, the attractions – and the will.

The overall number of tourists to Thailand has increased quickly over the last 20 years, from about 8 million in 1998 to over 39 million in 2019. For 2019, the Tourism Authority of Thailand (TAT) recorded a revenue of 2.01 trillion baht in tourism revenue. Thailand's MEEC industry had also been growing steadily since 2010, with the number of MEEC travelers rising from 679,585 to 1.27 million individuals being welcomed in 2019, right before the start of the Covid-19 pandemic. MEEC revenues increased more than doubled from 43.5 billion baht in 2010 to 94 billion baht in 2019. (TCEB's MICE Statistics Report, Fiscal Year 2019 – 2020) However, in 2020 and due to the Covid-19 outbreak, the number of international MEEC travelers and revenues in Thailand were significantly dropped and projected at 476,944 people (-63% from 2019) and 29,843 MB (-68% from 2019) (TCEB, 2020). (Thailand Tourism Statistics Report & TCEB's MICE Statistics Report, Fiscal Year 2019 – 2020)

According to the 2019 MICE (MEEC) statistics report by the Thailand Convention & Exhibition Bureau (TCEB), the contributions by sector in terms of the number of travelers were Meetings (31.4%), Incentive travel (25.6%), Conventions (24.4%), and Exhibitions (18.6%) and in terms of revenues were Meetings (31.5%), Incentive travel (18.9%), Conventions (27.9%), and Exhibitions (21.7%). (TCEB's MICE Statistics Report, Fiscal Year 2019 – 2022) (Figure 1) (Table 1) (Table 2) (Table 3)



Figure 1 MICE Contribution, Thailand, Fiscal Year 2019 – 2020



Source: Thailand Tourism Statistics Report & TCEB’s MICE Statistics Report, Fiscal Year 2019 – 2020

Table 1 Foreign Travelers in Thailand by Objective, Fiscal Year 2019 – 2020

Objective of Traveling	# of Travelers (people)	Contribution (%)	Revenues (Mil Baht)	Contribution (%)
1.Total Foreign Travelers	39,201,145	100.00	2,011,811.03	100.00
2.MEEC Travelers (19)	1,273,981	3.25	93,971	4.67
1.Total Foreign Travelers	6,702,396	100.0	332,013	100.0
2. MEEC Travelers (20)	476,944	7.12	29,843	8.99

Source: Thailand Tourism Statistics Report & TCEB’s MICE Statistics Report, Fiscal Year 2019 – 2020

Table 2 MICE Travelers in Thailand, Fiscal Year 2019 – 2020

	M	I	C	E	Total MICE
	Meetings	Incentives	Conventions	Exhibitions	
Oct 16 – Sep 17	259,901	271,793	300,273	215,992	1,047,959
Oct 17 – Sep 18	335,992	369,370	317,396	233,228	1,255,986
Oct 18 – Sep 19	331,084	370,882	308,010	264,005	1,273,981
Oct 19 – Sep 20	149,638	122,102	116,268	88,936	476,944
<b>Variance 19/18 (%)</b>	<b>-1.46</b>	<b>+0.41</b>	<b>-2.96</b>	<b>+13.20</b>	<b>+1.43</b>
<b>Contribution (2019) (%)</b>	<b>25.99</b>	<b>29.11</b>	<b>24.18</b>	<b>20.72</b>	<b>100.00</b>
<b>Variance 20/19 (%)</b>	<b>-54.80</b>	<b>-67.08</b>	<b>-62.25</b>	<b>-66.31</b>	<b>-62.56</b>
<b>Contribution (2020) (%)</b>	<b>31.37</b>	<b>25.60</b>	<b>24.38</b>	<b>18.65</b>	<b>100.00</b>

Source: TCEB’s MICE Statistics Report, Fiscal Year 2019 – 2020

Table 3 MICE Revenues in Thailand (Mil Baht), Fiscal Year 2019 – 2020

	M	I	C	E	Total MICE
	Meetings	Incentives	Conventions	Exhibitions	
Oct 16 – Sep 17	26,117	16,703	26,102	18,808	87,730
Oct 17 – Sep 18	30,473	20,669	25,325	19,156	95,623
Oct 18 – Sep 19	29,556	20,169	23,955	20,291	93,971
Oct 19 – Sep 20	9,414	5,624	8,317	6,488	29,843
<b>Variance 19/18 (%)</b>	<b>-3.01</b>	<b>-2.42</b>	<b>-5.41</b>	<b>+5.92</b>	<b>-1.73</b>
<b>Contribution (2019) (%)</b>	<b>31.45</b>	<b>21.46</b>	<b>25.49</b>	<b>21.59</b>	<b>100.00</b>
<b>Variance 20/19 (%)</b>	<b>-68.15</b>	<b>-72.12</b>	<b>-65.28</b>	<b>-68.03</b>	<b>-68.24</b>
<b>Contribution (2020) (%)</b>	<b>31.55</b>	<b>18.85</b>	<b>27.87</b>	<b>21.74</b>	<b>100.00</b>

Source: TCEB’s MICE Statistics Report, Fiscal Year 2019 – 2022

The Covid-19 pandemic has interrupted and altered daily lives, from shopping and traveling to the ever-constant need to wash and sterilize our hands. The tourism industry, including the MEEC sector, is no exception. COVID-19 has led to a significant shift in attitudes

and these attitudes will affect virtually all aspects of tourism, notably from a tech innovation perspective. Technology and health and safety practices will be extremely critical as we figure out ways to remain in business while strictly adhering to safe and healthy measures. In a post-pandemic environment, MEEC trends are bound to evolve. In order to survive and remain competitive, Thailand's MEEC industry as a whole need to adapt and adjust the way it operates the business. Through these challenging times, improving and enhancing operational efficiencies via MEEC tech process innovation is undeniably one of the key competitive survival strategies for immediate implementation.

### **Technological Innovation within the MEEC Sector**

The MEEC sector has become increasingly technologically sophisticated noted Park & Gretzel (2007). According to IBTM world (2013) recent business press investigations offer strong evidence that new tech innovations, particularly from a process-driven standpoint, are significantly affecting the way MEEC experiences are being shaped. Process innovations are innovations that improve the operational process through the introduction of new methods, services, or systems, which MEEC tech innovation in this context would fall under this definition. An IBTM survey (2013) among venue operators and event organizers unveiled the continuing rise and wider use of MEEC tech innovations. The State of Event Technology Adoption Research also revealed that 63% of MEEC event organizers have deployed event technology and innovation to enhance their events. MEEC tech process innovation is a strategic approach for MEEC operators to upgrade and create added value to MEEC events and enhance their operational processes and efficiencies through tech innovation and creativity. Maital & Seshadri (2007), state that it is now an increasingly popular tool for MEEC operators to achieve the ultimate MEEC experience for consumers and has a critical role to play in meeting consumers' expectations drawing more MEEC visitors as well as attracting returned MEEC visitors.

Examples of current MEEC tech process innovations are shown and MEEC tech process innovations by purpose are summarized in TCEB's Report "MICE Model for Economic Growth (3<sup>rd</sup> Phase) under A Study of Technology to Support the Organizing of MICE Events in Thailand, 2017".

The top 5 MEEC tech process innovations being utilized include registration systems, badge systems, internet access for attendees, Wi-Fi access for attendees, and attendee tracking systems (Islam & Mazumder, 2010; Kenteris, Gavalas, & Economou, 2009). Its usage adoption

accelerates such potential upsides for MEEC operators as streamlined operations, optimized time, and process, reduced operational cost and staff, increased promotional efficiency, increased information management efficiency, competitive advantage, eco-friendly and innovative leadership image. Advanced technology also helps enhance the customer experience while making events more interesting and attracting more visitors. The key and clear usage benefits to end users i.e. attendees and visitors include the ability to increase easy accessibility and convenience, to reach customers' emotions, to enhance the customer experience, and ultimately to stimulate customer engagement and urge their participation in future events. However, and despite the distinct advantages, certain MEEC operations are still hesitant to adopt these tech innovations from such barriers as low technology literacy, technological complexity, concern over data security, diluted event content from overwhelming technology, and compromised human interaction.

The COVID-19 pandemic has transformed the way MEEC operators worldwide, including those in Thailand, are conducting their business as it fuels the rise of new normal "virtual and hybrid" events to a beyond expected level and this will be a new norm even after the end of the pandemic. MEEC operators must continue their business sustainably, become future-proof and tech capable in the face of technological disruption and a fast-shifting business landscape. Thanks to such fact, the whole MEEC industry in Thailand has agreed that in order to survive as well as to drive further growth and capabilities to stay competitive in the post pandemic's new operating environment, the adoption and implementation of MEEC tech innovations to a strategically appropriate level to improve and enhance their operational capabilities and efficiencies is indispensable. An industry-wide adoption of MEEC tech innovations will help create competitiveness for Thailand as aimed to achieve the premiere MEEC destination and regional MEEC hub status as the ultimate vision.

### **Government Promotion of Technology in the Thai MEEC Sector**

According to the Thailand Board of Investment (BOI) (2023), the Government of Thailand has recently unveiled plans to transition the country's economy towards a value-based or innovation-driven model called Thailand 4.0 the next revolution. This marks a significant departure from the traditional economic model that has been in place for decades, which was primarily based on low-cost manufacturing and tourism. The move towards a value-based economy is motivated by the government's recognition of the need to create sustainable economic growth in the long term. The government aims to achieve this by promoting

innovation and creativity, increasing productivity, and developing high-value industries such as technology, advanced manufacturing, and healthcare.

To achieve these goals, the government has launched several initiatives, including the Thailand 4.0 policy and the Eastern Economic Corridor (EEC) project. Thailand 4.0 is a national strategy aimed at promoting innovation and technology development across all sectors of the economy. The EEC project, on the other hand, is a specific initiative aimed at developing three Eastern provinces into a hub for high-tech industries, such as robotics, aviation, and biotechnology.

To support these initiatives, the government has also implemented several policies to create an environment that is conducive to innovation and creativity. For instance, it has simplified business regulations, increased investment in research and development, and provided financial support to startups and innovative enterprises. Overall, the transition towards a value-based or innovation-driven economy is a significant undertaking that requires a long-term commitment from the government and other stakeholders. However, if successful, it has the potential to transform Thailand's economy and improve the country's competitiveness in the global market.

As a contribution to this the Thailand Convention & Exhibition Bureau (Public Organization (2023) or TCEB, stated in its press release that in response to more vital roles of innovation and technology in several sectors, the TCEB has prioritized the development of MEEC Intelligence & Innovation to drive the MEEC industry and national economy, which will contribute towards this value-based or innovation-driven economy. Towards this end, 3 strategies are to be executed:

1. Intelligence Center & Consultation Support focusing on the dissemination of information and knowledge on MEEC industry ranging from distinctive trends, macro picture of the industry to its economic and social impacts. The other roles are the compilation and analysis of statistical data of MEEC industry and MEEC Standard Process Development by which Thailand MEEC Index will be developed as a tool to ensure the improved efficiency of business operation.
2. Innovation Services for MEEC Advancement will promote the use of Open Innovation in MEEC event organization processes that are jointly executed by MEEC entrepreneurs and innovation service providers. To realize this purpose, an Inno-Voucher is on offer along with BizConnect, a platform to facilitate and enhance efficiency in every stage of MEEC event organization.

3. The MICE Marketplace Platform supports e-commerce within the MEEC sector and aims to develop digital markets and marketing campaigns. Currently, the TCEB has a Thai MICE (MEEC) Connect platform, which compiles product information and services of every kind related to the MEEC industry belonging to 12 business categories. The platform is instrumental in connecting organizers with product and service providers, thus, enabling design of event plan by themselves or through auto-matching system. So far, the platform is hosting around 5,000 traders featuring their products and services free of charge.

As part of the strategies, the TCEB is continuing its MICE Winnovation project for 4 consecutive years. The project has been successful in supporting MEEC entrepreneurs to efficiently apply innovation and technology to deal with their pain points. It also entails the compilation of information sources, marketing budget support, business-matching, sharing of knowledge for practical purposes and business differentiation to increase competitiveness at global scale.

The TCEB (2023) further states that the MICE Winnovation project is a multi-sectoral collaboration. Project partners include the National Innovation Agency (Public Organization) or NIA, Digital Economy Promotion Agency (DEPA), National Science and Technology Development Agency (NSTDA), Thai Exhibition Association (TEA), Thailand Incentive and Convention Association (TICA), Thai Hotels Association (THA) and Future Tales LAB. Partners representing education sector comprise of Kasetsart University, Khon Kaen University, Mahidol University, Bangkok University, and National Institute of Development Administration (NIDA).

Additionally, one of the planned projects in the Thai government action plan is MICE Techno Mart 2023, a platform to demonstrate the ultimate innovation ranging from robots to data analysis for the MEEC industry. Simultaneously, it is serving as a business-matching platform between MEEC entrepreneurs and technology developers, which will drive the Thai MEEC industry to use innovative products and technologies in addressing new and post-COVID-19 needs.

### **Adoption of New Technology**

The seminal theory regarding the adoption of new technology, developed firstly in 1962, the Diffusion of innovations, was developed by Rogers (1995). who argues that the adoption of

an innovation by individuals or groups can be influenced by several factors, which can be categorized into five main categories:

1. **Relative advantage:** This refers to the degree to which an innovation is perceived as better than the product or practice it replaces. The higher the relative advantage of the innovation, the more likely it is to be adopted. For example, the introduction of smartphones with better features and capabilities made them more advantageous than basic feature phones.
2. **Compatibility:** This refers to how well an innovation fits into the values, experiences, and needs of potential adopters. Innovations that are compatible with existing practices or technologies are more likely to be adopted than those that require significant changes. For example, the adoption of electric vehicles might be difficult in a society where there is limited charging infrastructure.
3. **Complexity:** This refers to the perceived difficulty of understanding and using an innovation. Innovations that are easy to understand and use are more likely to be adopted. For example, the introduction of touch screen technology in smartphones was a major innovation, but it was easy to use and understand, which led to its rapid adoption.
4. **Trialability:** This refers to the degree to which an innovation can be tested or experimented with before adoption. Innovations that can be easily tried out with low cost and low risk are more likely to be adopted. For example, a new software application that offers a free trial period may be more likely to be adopted.
5. **Observability:** This refers to the extent to which the results of an innovation are visible to others. Innovations that have visible benefits are more likely to be adopted, as they provide social proof of their usefulness. For example, the use of solar panels on homes and buildings is a visible example of adopting renewable energy, which can lead to increased adoption by others in the community.

To explain how new ideas, products, and technologies spread through society, the theory identifies five categories of adopters: innovators, early adopters, early majority, late majority, and laggards.

Innovators are the first group of people to adopt a new innovation. They are risk-takers and are willing to try new things. According to Rogers (1995), innovators make up about 2.5% of the population. They are crucial for the diffusion process, as they serve as opinion leaders and help spread the word about the new innovation.

The second group of adopters is the early adopters. Early adopters are also willing to take risks but are more deliberate in their decision-making process than innovators. They make up about 13.5% of the population and are seen as role models by others.

The early majority is the next group to adopt a new innovation, representing about 34% of the population. They are more skeptical than early adopters but are still willing to try something new if they see the benefits. The early majority tends to wait until the innovation has been tested and proven successful before adopting it.

The late majority represents about 34% of the population. They are more conservative than the early majority and are often skeptical of new ideas. They typically wait until an innovation is well-established before adopting it.

The final group of adopters is the laggards, who make up about 16% of the population. Laggards are the last to adopt a new innovation and often resist change. They may be skeptical of new ideas or lack the resources to adopt the innovation.

Rogers (1995) theory has been criticized on numerous occasions by Leonard-Barton, (1995), Damanpour, (1991), and Bayer and Melone (2003), with perhaps the criticism that the external operating environment and incentives to encourage innovation take-up not being given sufficient attention.

Davis (1989) developed the Technology Acceptance Model and this is a widely used theoretical framework that explains how users adopt and use new technologies. TAM proposes that user behavior toward technology is determined by two main factors: perceived usefulness and perceived ease of use.

Perceived usefulness refers to the degree to which a user believes that a particular technology will improve their performance or productivity. Perceived ease of use, on the other hand, refers to the user's perception of the degree of effort required to learn and use the technology.

According to the TAM, these two factors directly influence a user's intention to use a technology, which in turn predicts actual use behavior. TAM also suggests that external factors such as social influence and facilitating conditions can indirectly influence user behavior by affecting perceived usefulness and ease of use.

TAM has been widely applied in various fields such as information systems, marketing, and healthcare, and has undergone several iterations over the years. In addition to the original two factors, later versions of TAM have included additional components such as perceived enjoyment, subjective norm, and trust.

## **MATERIALS AND METHODS OR METHODOLOGY**

The key exploratory research question the Authors proposed was what is the MICE event Organizers' attitude to the adoption of new technology and what influences their attitude and intention to adopt new technology?

The variables of interest to the Authors were therefore the Thailand MICE organizers' attitude to new technology and their intention to adopt new technology in their business, plus the factors that influence attitude and intent to adopt, particularly the relevant weight of influence of government policy and the business climate. The variables and data selected were a subset of a wide study undertaken by one of the authors in 2022.

The variables selected were Dependent variables – the respondent's attitude to new technology, secondly their intention to adopt more new technology, and Independent variables - the respondents' view of government support and business climate, modifications to Rogers (1995) diffusion of innovation theory, these variables taken from facilitating conditions in the Davis (1989) TAM model, the final variables being the availability and usefulness of additional new technology products (based on observability, usefulness, and ease of use, and the Davis (1989) Technology Acceptance Model (TAM), the capabilities of their staff and management, and the ultimate decision makers' technical capabilities (based upon an extrapolation of innovators early adopters etc taken from Rogers (1995) Diffusion of innovation theory.

### **Model Test**

A multiple regression analysis using SPSS was undertaken on a pilot sample of 30 respondents and the analysis indicated that the adj r<sup>2</sup> of the multiple correlation between the independent variables and both the two dependent variables was in excess of 0.7 (p<0.01) indicating a good model fit.

### **Data Collection**

515 questionnaires were distributed online in September 2022 to MICE organizers in Thailand, 302 were completed. The questionnaire's content validity was judged and evaluated with the assistance of six different experts, including MICE executives from private and public organizations as well as education administrators in the field of tourism, MICE, and hospitality, to evaluate each of the items on the questionnaire. Cronbach's Alpha (0.78) was used to test scale reliability and a Shapiro Wilks test for data normality (p>0.05). The variables and responses analyzed for this paper were a subset of this questionnaire.



## Data Analysis

The study used Stepwise multiple linear regression, multiple linear regression, and linear regression within SPSS to determine the combined and individual relationship between the variables. The adjusted  $r^2$  and statistical significance statistics being selected to indicate if a relationship exists and the strength and relative weight of importance of the relationship between the variables.

## Inferential Analysis

All of the independent variables within the model have statistically significant relationship with the dependent variables ( $p < 0.01$ ). The adjusted  $r^2$  of the multiple relationship of the independent variables to respondents' attitude being 79.4% (adj  $r^2 = 0.794$   $p > 0.01$ ) and on to intention to adopt at 75.8%. (adj  $r^2 = 0.758$   $p < 0.01$ ).

The regression analysis showed that attitude had the largest influence on intent (adj  $r^2 = 0.52$   $p < 0.01$ ), followed by government support and business environment (adj  $r^2 = 0.49$   $p < 0.01$ ), staff technical capability being the 3<sup>rd</sup> major influence (adj  $r^2 = 0.39$   $p < 0.01$ ).

The variable attitude toward using new technology was influenced by the view of the capabilities of the respondents' staff and management (adj  $r^2 = 0.55$   $p < 0.01$ ), followed by the respondents' view of government support and business climate (adj  $r^2 = 0.52$   $p < 0.01$ ), and the ultimate decision makers technical capabilities (adj  $r^2 = 0.33$   $p < 0.01$ ).

## Descriptive Statistics

A descriptive statistical analysis of the respondents indicates that 67% are educated to post graduate level. Most respondents are undertaking more than one MICE activity by nature, 34.5% are Meeting Organizer, followed by Event Organizer, Professional Exhibition Organizer, Professional Convention Organizer, and Incentive Travel Organizer respectively. In terms of the major MICE activities, 45% are undertaking Meetings activity, followed by Exhibitions / Events, Incentive Travels, and Conventions activities respectively.

65% of respondents can be classed as being at the top level of the organization, working within general management, marketing, and operations. All of them are involved in the decision making of MICE technological innovation usage, 85% are currently adopting MICE technological innovation in one way or another, but 99.6% are of the opinion that they will adopt it further in the future.

## RESULTS AND DISCUSSION

The aim of this study was to examine that adoption of new technology within the Meetings, Exhibitions and Conventions sector in Thailand and the creation of a model that can be used to gather data that can be analyzed to determine the key influential factors on the adoption of new technology in any Sector in any Country or Region, and an inferential analysis model using stepwise multiple linear regression and linear regression to rank the weight of influence of these factors on the MEEC operators intention to adopt new technology further. The key exploratory research question was what is the MICE event Organizers' attitude to the adoption of new technology and what influences their attitude and intention to adopt new technology?

The key finding of the study is that 85% of the participants are currently adopting MICE technological innovation in one way or another, and that 99.6% are of the opinion that they will adopt it in the future.

The inferential analysis indicates that the MICE operators are most directly influenced by their own attitude to new technology, their own attitude being influenced by the capabilities of their staff. Government support to the business climate does appear to play an important role in influencing both the respondent's attitude to new technology and its intention to adopt more new technology.

## CONCLUSION

In conclusion, there appears to be a recognition that the MEEC industry needs to continue to adapt to new technological advancements and by doing so it will attempt to ensure that Thailand remains a competitive location for the MEEC sector which will also contribute to the value-based or innovation-driven economy that the Government of Thailand is seeking, but it remains to be seen if Intelligence Center support, Open innovation services, and a MICE marketplace platform will achieve those desired results. However, based upon the empirical study carried out before the new initiatives launched by the Thai Government, 85% of the study's participants are currently adopting MICE technological innovation in one way or another, and 99.6% are of the opinion that they will adopt it more in the future. The empirical study also indicates that the business environment, of which government policy is a major factor, was found to be the second most direct influence on both the attitude to and the intention to adopt new technology.

## LIMITATIONS

The study was only conducted within Thailand, with a relatively small sample size of participants with data gathered online.

## RECOMMENDATIONS FOR FURTHER RESEARCH

It is recommended that a similar study be undertaken in a wider geographical location and that a follow up study is done within Thailand in two years to investigate whether the initiatives by the Thai Government have influenced attitude and the intention to take up new technology.

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