

Investigation of Technology Adaptation in the Hospitality Industry in Mandalika Special Economic Zone

Aryan Agus Pratama^{1*}, Muhamad Jumadi², Rizal Ramdani¹,
Nur Aisya Addina Ahmad Bakarim³

¹Universitas Bumigora, Mataram, Indonesia

²Politeknik Negeri Bali, Jimbaran, Indonesia

³Universiti Teknologi MARA, Selangor, Malaysia

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Abstract

Mandalika Special Economic Zone (Mandalika SEZ) has been built and developed to create an independent and sustainable tourism industry ecosystem. The digitization of destinations in the Mandalika SEZ requires the hospitality industry to adapt and respond strategically. The application of technology is believed to be applied in supporting the business continuity of the hospitality industry. This study aims to investigate hoteliers' perceptions of technological adaptation. The method used is a phenomenological qualitative approach. Data were collected through observation, interviews with five key informants, and documentation. The interviews were transcribed and analyzed by condensing the data, assisted by a coding table. The results of this study found that two important aspects that drive the adoption of technology in hotel operational services are the desire for operational automation and marketing agility. The technology adoption process focuses on hotel operational services that are considered a necessity in the modern era and technological advancements. The existence of this technology adoption indicates the adaptability of technology in the hotel industry. This result contributes as a significant indicator of the progress towards digitalizing destinations, crucial for enhancing the sustainable image of Mandalika SEZ. Consequently, it is strongly recommended to develop an integrated technology application model for operational services, serving as a blueprint for other stakeholders in the hotel industry.

Keywords: Hospitality Industry; Mandalika Special Economic Zone; Technology Adaptation.

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*Corresponding author. Tel: +6282236255425, E-mail: aryan@universitasbumigora.ac.id
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I. Introduction

Mandalika Tourism Special Economic Zone (Mandalika SEZ) has been built and developed to create an independent and sustainable tourism industry ecosystem (Damanik et al., 2022). The presence of Mandalika SEZ with international standard infrastructure and facilities encourages movement and strengthens economic growth (Laksmi et al., 2023). The area has also attracted the attention of investors to develop businesses in the tourism sector, especially hotels. In fact, hotel construction is the main indicator of the realization of Mandalika SEZ development (Pratama et al., 2023). However, the increasing number of hotels has created an increasingly competitive business environment. Moreover, Anggareni (2021) stated that there has been a change in the behavior of tourists who are now digital natives. Therefore, the hospitality industry is faced with the demand to adapt and respond strategically to existing competition.

In the current digital era, Damanik et al. (2022) describes smart tourism destinations as a solution to meet the needs of tourism development increasingly integrated with technology. The process of destination digitalization, which is supported by strong and adequate technology and communication infrastructure, including in Mandalika SEZ, is not only a modernization effort but also an innovation developed as a strategy to increase competitiveness. Similarly, Aprinawati and Prayogo (2022) define destination digitalization as the embodiment of an innovative destination that not only ensures the continuity of regional development but is also accessible to anyone and facilitates interaction between tourists, services, and attractions. This condition must be strengthened by the readiness and acceptance of hoteliers toward the use of technology in their operations (Aprinawati and Prayogo, 2022; Damanik et al., 2022).

Technology adaptation in hospitality involves the use of management information systems, service automation, and digital solutions to improve guest experience as well as operational efficiency (Akyeampong and Nutsugbodo, 2016; Mohideen Moyeenudin et al., 2018). This is also important in data management, a crucial aspect in the hospitality industry, where data entered in property management systems and websites by guests must be managed specifically and accurately (Mohideen Moyeenudin et al., 2018). Research conducted by Callestyo and Adiasih (2017) shows that there are still hotels that have not adopted industrial-based Information and Communication Technologies (ICT) in their operations, which results in the emergence of various service problems, high potential for errors, fraud, and delays in reports, which further cause delays in management decision-making. However, the results of Akyeampong and Nutsugbodo (2016) state that star hotels have used industry-based information and communication technologies such as reservation and property management systems that contribute to operational efficiency. This also encourages hotels to compete to optimize the use of technology, both in service operations and marketing (Akyeampong and Nutsugbodo, 2016; Callestyo and Adiasih, 2017; Mohideen Moyeenudin et al., 2018). This phenomenon underscores the gap in the use of technology in the hospitality industry that affects not only operations but also perceptions and their impact on customer satisfaction.

Based on previous research presented, the novelty of this research is that an in-depth investigation of the technological adaptability of the hospitality industry within the scope of destination digitalization has not been carried out. Therefore, this study aims to determine the perception of hoteliers regarding technological adaptation in the digitalization era using a phenomenological approach. Exploring the understanding, attitudes, and views of business people towards technological developments, as well as the utilization of technology that can be used to improve operational efficiency and service quality (Akyeampong and Nutsugbodo, 2016; Mohideen Moyeenudin et al., 2018). Thus, this research contributions are not only to the academic literature in the field of hospitality and technology (Melián-González and Bulchand-Gidumal, 2016; Ezzaouia and Bulchand-Gidumal, 2020; Sudirman, 2023), but also offers practical recommendations that can be applied in the daily operations of the hospitality business. Therefore, this research is hoped to assist hotel management in making better decisions regarding technology investment and provide guidance for the development of effective technology adaptation strategies in the hospitality industry.

II. Literature Review

The existence of information technology has influenced and changed the operating system in the hospitality industry. Hoteliers have used and utilized information technology to improve operations

and expand market reach. Even [Akyeampong and Nutsugbodo \(2016\)](#) stated that the existence of information technology has changed and affected hospitality operations significantly. This adjustment is called [Ezzaouia and Bulchand-Gidumal \(2020\)](#) due to competitive pressures, customers, and government policies. In addition, the application of information technology in hospitality services is very diverse and contextualized with market segmentation. It is also mentioned that the role of information technology is able to improve customer service, improve operations, increase revenue, and minimize operational costs. [Sudirman \(2023\)](#) stated also stated that the application of ICT is able to stimulate the growth of energy efficiency and environmental pollution in the tourism industry. Thus, the utilization and application of ICT can be a driving force towards the future of a sustainable tourism industry. In its development, the application of ICT has been applied in supporting the business continuity of the hospitality industry. [Claudia et al. \(2019\)](#) recommend that the hospitality industry use a computerized system for time efficiency and minimize the possibility of errors in recapitulating reports, especially financial ones. This computerized application is considered urgent and important because it is an internal control tool. This application has been developed specifically for property management and can be integrated with WEB services such as reservation systems and property management and Point of Sale devices ([Mohideen Moyeenudin et al., 2018](#)). Then, [Melián-González and Bulchand-Gidumal \(2016\)](#) developed a model of the impact of information technology implementation on hospitality operations (can be seen in [Figure 1](#)). The framework model is useful for understanding and evaluating the role of information technology in modernizing and improving operations and services in the hospitality industry. The model helps stakeholders in the hospitality industry to make more informed decisions regarding technology investments and develop future-oriented strategies.

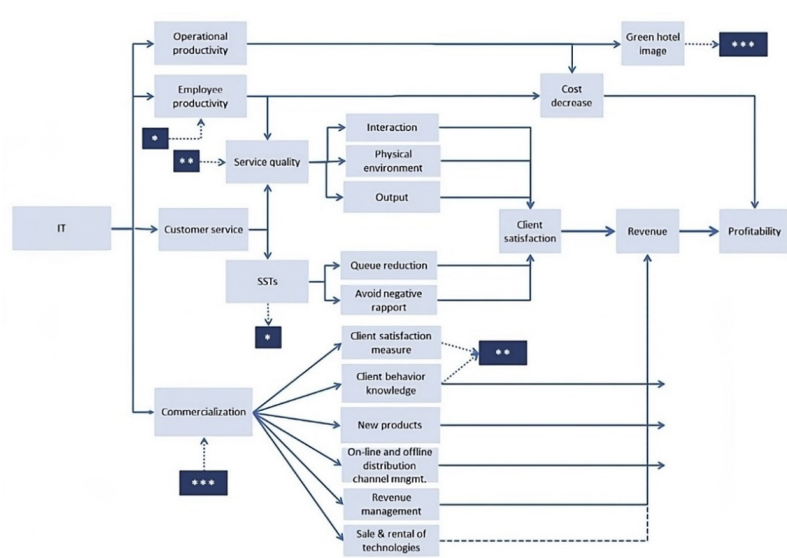


Figure 1. Model of the Impact of Information Technology Implementation on Hospitality Operations ([Melián-González and Bulchand-Gidumal, 2016](#))

III. Method

This research used a phenomenological qualitative approach because it is based on the closeness or depth of the researcher to the location and key informants involved ([Saufi et al., 2022](#)). The research is limited to the point of view of business actors or supply-driven to investigate attitudes, beliefs, behaviors, or experiences [Battour et al. \(2018\)](#) in technology adaptation. Data was collected during February and March 2024 through observation, interviews, and documentation. Observations were conducted offline and online. Offline observations were made by visiting Mandalika SEZ and two nearby hotels. Online observations were conducted by visiting various online travel agent applications. Furthermore, interviews were conducted with five people, three hotel staff members and two managers who are members of the Mandalika Hotel Association.

The results of observations and interviews were poured into text or transcripts to be analyzed using the qualitative data analysis model developed by [Miles et al. \(2014\)](#). The data condensation stage is a crucial stage. It refers to the process of selecting, focusing, simplifying, abstracting, and/or transforming data that appears in the content of written field notes (interview transcripts), documents, and other empirical materials. This process was supported by using the coding table from [Safitri et al. \(2022\)](#). This process facilitated us in finding meaning units, condensing meaning units, coding, and explicitly identifying themes for categorization. Categorization was done by comparing and looking at similarities and relationships based on social background, culture, education, experience, and theory. Furthermore, the findings were confirmed by triangulating and confirming with the informants (member check) and confronted with the results of previous research.

IV. Results and Discussion

The findings of this study explain the impetus for the initiation of hoteliers to adopt technology. This technology adoption process emphasizes hotel operational services, considered necessary in the modern era and technological advances. This adoption is also considered a form of technological adaptation of the digitalization of Mandalika SEZ. The main aspects that drive the use of technology are the desire for operational automation and marketing agility.

1. Operational Automation

In the context of this research, operational automation is defined as an aspect that explains the ease and benefits of using technology in hotel operational services. According to [Awang et al. \(2022\)](#), automation is the application of technology that allows technical processes or procedures to be carried out without human assistance. Meanwhile, hotel operations refer to a series of management activities that aim to provide facilities and services that meet consumer needs. This transformation reflects the understanding of technology to accelerate processes and improve the quality of interaction with customers.

The use of technology in hotel service operations is very supportive of business continuity because it offers many benefits and advantages in the management and operational aspects of the hotel. This facilitates the use and maintenance process and provides added value in improving service quality and customer satisfaction. Technology allows hotels to provide faster, more accurate, even personalized services, which ultimately increases efficiency and reduces operational costs.

Make it easier for us to do our daily work and speed up the process of our transactions with customers, as well as help us in preparing reports related to our finances (SPV-FO, 2024)

The hotel industry players agree that the use of technology is very helpful and facilitates hotel operations, especially in terms of services that are directly related to consumers. This shows that technology is not only easy to obtain but also easy to use. [Mohideen Moyeenudin et al. \(2018\)](#) mentioned the Point of Sales (POS) device as a commonly used technological device in hotel operations. This technology has also been readjusted to technological advances and developments to make it more accessible because it has been integrated with the WEB system. Its application is in front office services, back office, and restaurant management systems.

We use the POS system because it can be accessed by many devices because we use the web-based one. So, the work of reservation and ensuring room availability is automatic until the report as well. We are now no longer manually making reports, if in the past we needed to print and then calculate manually for the finances, so a lot of paper was used, not to mention if we were wrong, we would repeat it, it was expensive. Now it's automatic, so it saves us a lot of money on printing and stationary (Manager Ops, 2024).

The existence of this technology system certainly increases operational efficiency and can offer better analytical capabilities and can be tailored to user needs. This is in line with [Chirchir et al. \(2019\)](#) research which states that one of the advantages of using POS is the ability to help businesses get information related to the amount of room inventory in real time and visitor data. This allows

hotels to have customer data that covers their behavior and preferences to optimize offers and sales. This supports the findings of Ham et al. (2005) who stated that using technology in the front and back offices can increase sales and room occupancy, word-of-mouth and electronic word-of-mouth promotional activities, and reduce operating costs. This system also accelerates the process of preparing accurate and transparent financial reports. This aspect also answers Callestyo and Adiasih (2017) concerns regarding hotels that still use manual accounting information systems result in the process of making reports taking a long time, high potential for errors, low information accuracy, causing fraudulent recording, and delayed decision making.

Automation of hotel operations is the benefit most felt by hoteliers in Mandalika SEZ. In the operational context, using technology also makes it easier to project profits, maintain the stability of operational costs, and accelerate the managerial decision-making process. This also strengthens the results of Melián-González and Bulchand-Gidumal (2016) regarding the impact of technology implementation on increasing hotel operational productivity, which can create its own image. The existence of a long-term impact on image creation or formation can indicate hotel excellence. This means business competition in the hotel industry sector is increasingly competitive in Mandalika SEZ.

2. Marketing Agility

In the context of this research, what marketing agility means is the hotel's ability to adapt and respond to changes in the business ecosystem due to the digitalization of Mandalika SEZ. The realization and operation of the Mandalika circuit encourages hotel industry players to be more aggressive towards change. This is because business people believe that the existence of the Mandalika SEZ will create a conducive tourism business environment and foster the growth of the hotel accommodation business. Pratama et al. (2023) mentioned that the number of accommodations in the form of hotels, resorts, and homestays in Mandalika SEZ continues to increase and creates increasingly competitive business competition. This condition certainly forces business people to continue to innovate and develop differentiators with their competitors. This means that they must adjust to the ecosystem and changes in customer behavior that are inseparable from technology and the internet.

Mandalik SEZ has been designed as a technology-based destination because tourists also do anything via cellphone, it's a digital system right. Then we have a hotel association here, there are 41 hotels that are members. All of them have used POS, but only 3 hotels have used it to the back-office, the others are only in the front-office and restaurant. So, not all (Hotel Manager, 2024).

Hoteliers have realized their current condition. Being part of the Mandalika SEZ ecosystem, which is designed as a world-scale digital base destination, is certainly very promising. Technological sophistication will be very helpful if properly optimized. Moreover, only 3 out of 41 hotels have applied technology as a complete service base. The opportunity to compete to win the market still looks great. However, if not immediately improved, technological advances can reduce the opportunity to capture the market while operating costs will continue to increase. Whereas Yadegaridehkordi et al. (2020) state that technology is the most influential dimension in the relative advantage of hotels.

Further explained by the Hotel Manager (2024), as part of the association, that there are only two hotels that use POS as a whole and integrate with all services. Both hotels are large international hotels. While one other hotel uses a variety of technology systems and is combined to support each other. This condition indicates that only one hotel can find and utilize opportunities to compete and be superior to other hotels. This response or action indicates the strong characteristics of tourism entrepreneurs in reading reality, acting strategically and tactically to manage business resilience (Saufi et al., 2022). This attitude toward technology adoption is mentioned (Melián-González and Bulchand-Gidumal, 2016) as a competitive strategy to win the market.

This marketing agility needs to be built and strengthened as a resource to survive and optimize opportunities to strengthen competitiveness. This is closely related to the ability to evaluate external conditions with a broader context as a stimulus to build the intention to adopt technology. The findings are in line with the opinion of Akyeampong and Nutsugbodo (2016) which also suggests that the application and use of this technology system are said to be able to increase competitive advantage effectively. All hoteliers who are members of the Mandalika Hotel Association have implemented technology systems

in operational services directly related to visitors. This illustrates their readiness and adaptability to digitalizing the Mandalika SEZ destination.

V. Conclusion

This study found technological adaptability in the hotel industry in Mandalika SEZ. Adaptability is shown by adopting technology or applying technology driven by the desire for operational automation and marketing agility owned by hotels. This technology adoption stimulates hotel competitiveness to win the market by optimizing operational cost efficiency. This condition also supports the realization of the digitalization of the Mandalika SEZ destination. Furthermore, the results of this study contribute as an indication of the realization of destination digitalization, which is expected to strengthen the sustainable image of Mandalika SEZ. This is also expected to manifest the impact of the application of information technology on hospitality operations. In addition, the results of this study also strengthen the theory of the technology acceptance model (TAM) on the components of external variables in the form of marketing agility as a strong stimulus and perceived use in the form of operational automation, which ultimately builds and strengthens the intention to use technology.

This research also reveals that one hotel incorporated in the Mandalika Hotel Association has successfully applied various types of technology as a basis for hotel operational services. The hotel should be investigated more deeply regarding the application model and use of technology in all service systems with various types of technology. Including the financing aspect, so that it can be a reference for other hotel industry players. This will greatly help players in the medium-sized hotel or homestay industry to adopt technology to build competitive strength in this digitalization era.

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