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# Synergizing Malaysian Homestays and the Digital Economy: A Collaborative Management Model

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## ABSTRACT

During the post-COVID-19 recovery period, the homestay sector in Malaysia has faced major challenges regarding modernization and technological integration. In addition, homestay operators have struggled with issues of sustainability and the need to collaborate on digital economic partnerships. A study involving 131 homestay operators, together with 13 government officials, demonstrated that operators realized the benefits of smart technology, but lacked the digital skills necessary to grow their customer base. Other significant obstacles to industry growth included regulatory hurdles, competition from illegal homestays, and financial difficulties. Sustainable growth will require collaboration between private companies, government, and homestay operators. If assisted by the government, the private sector could adopt new technologies that might operate using a public–private partnership management framework. A digital platform, established as a marketing focal point, would connect operators with larger markets and provide shared resources to support the sustainability of Malaysia’s homestay industry.

## KEYWORDS

Homestay Management, Collaborative Digital Economy, Sharing Economy, Smart Partnerships, Smart Tourism

## INTRODUCTION

The emergence of the homestay market has changed the Malaysian tourism industry, as tourists have enjoyed homestay’s more personalized service. Homestay accommodation has provided cultural exposure and interaction, offering experiential tourism (Gretzel, 2019; Gretzel et al., 2020; Suardana et al., 2024). The new digital sharing landscape, with online accommodation platforms such as Airbnb, has resulted in significant impacts on both the economy and on the sustainability of the tourism sector (Vila-Lopez & Küster-Boluda, 2022). Integrating homestays into the Malaysian economy

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has presented challenges regarding restrictive policies and quality concerns—issues that can be addressed by collaboration between homestay providers, government agencies, private organizations, and tourists (Dredge, 2017).

Public–private partnerships, integrated marketing efforts, regulatory frameworks, standardized quality assurance, technology, and quality systems are all crucial if Malaysia wishes to increase competitiveness, collaboration, and service quality in the homestay sector (Litheko, 2022), and the combined efforts by various stakeholders can provide integrated homestay products and services that will enhance tourists’ loyalty and engagement (Attanasio et al., 2021). Economic profitability, positive social change, and respect for cultural heritage increase the value of the tourism environment for all those involved (Rasoolimanesh et al., 2020). There is a critical need, therefore, for policies and regulations that ensure safety hygiene and service standards, while also encouraging growth and further improvement (Kurniati & Suryanto, 2023). Expansion in the homestay sector can be considered as a trend toward increasing the relevance of “healing tourism,” and many factors have suggested that the homestay sector is ready to meet the needs of future travelers—possibly facilitating profound change in the travel industry more broadly.

The homestay business in Malaysia falls under the purview of the Ministry of Tourism, Arts, and Culture (MOTAC). Despite challenges regarding the transition into the modern digital economy, Malaysia’s homestay business is an important sector within the nation’s tourism industry. The homestay sector has expanded to include 146 establishments in 2008, and 217 in 2023 (Table 1).

**Table 1. Homestays in Malaysia**

Number	Homestay	2008		2023	
		No. of Homestays	No. of Homestay Operator	No. of Homestay	No. of Homestay Operator
1	Selangor	16	535	16	222
2	Johor	15	435	26	465
3	Pahang	23	336	17	331
4	Negeri Sembilan	8	234	8	130
5	Sabah	19	228	34	441
6	Pulau Pinang	9	202	10	155
7	Kedah	10	200	15	206
8	Perak	6	178	11	145
9	Sarawak	16	172	49	706
10	Kelantan	8	163	8	122
11	Terengganu	7	149	7	104
12	Melaka	4	103	9	157
13	Labuan	3	65	3	80
14	Perlis	2	34	4	42
Total		146	3,034	217	3306

*Note.* Source: Ministry of Tourism, Arts and Culture, Malaysia, (2024).

The industry remains inefficient, however, due to outdated business models and poor adaptation to technology (Osman & Zakaria, 2020). This is evidenced by the reduction of registered homestay operators, from 449 in 2022, to 222 in 2023—and this was in Selangor, Malaysia’s most developed state (Table 2).

**Table 2. Homestays in Selangor: Number of Homestay Operators**

Number	Homestays in Selangor	District	2022	2023
			Number of homestay operators	Number of homestay operators
1	Banghuris	Sepang	80	40
2	Sg. Hj. Dorani	Sabak Bernam	20	13
3	Air Manis	Sabak Bernam	17	24
4	Batu 23, Sg. Nibong	Sabak Bernam	25	6
5	Sg. Sireh	Sabak Bernam	40	10
6	Sepintas	Sabak Bernam	20	7
7	Papitusulem	Sabak Bernam	32	13
8	Bougainvilla	Gombak	15	10
9	Kg. Endah	Kuala Langat	32	15
10	Kg. Sg. Lang Tengah	Kuala Langat	20	12
11	Batu Laut	Kuala Langat	17	13
12	Kg. Kundang	Kuala Langat	25	10
13	Kanchong Darat	Kuala Langat	50	14
14	Sg. Tenggi	Hulu Langat	30	9
15	Sg. Sembilang	Kuala Selangor	11	11
16	Felda Bukit Cherakah	Kuala Selangor	15	15
Total			449	222

*Note.* Sg. = Sungai; Kg. = Kampung. Source: Ministry of Tourism, Arts and Culture, Malaysia, (2024).

Due to the COVID-19 pandemic, the total income for Malaysian homestays in 2020 was 9,124,122.66 Malaysian Ringgit (MYR), down from MYR 29,661,736.78 in 2019; in 2021, it dropped to MYR 6,126,302.14. Nevertheless, the sector recovered in 2022, and gross earnings rose to MYR 28,556,503.14; and, in 2023, to MYR 40,457,321.51. Structural issues have persisted (Table 3), and the established homestay business model has contained many operational flaws due to its reliance on extensive manual processes, leading to inefficiencies in tourism market regulation and promotion (Efiong & Adegbola, 2020).

**Table 3. Homestay Malaysia: Generated Income**

Number	Homestay	Generated income from homestays (MYR)				
		2019	2020	2021	2022	2023
1	Selangor	924,459.00	252,255.00	98,618.00	1,408,517.00	1,843,242.00
2	Johor	744,678.00	539,986.00	772,031.00	2,562,257.00	4,811,683.00
3	Pahang	10,107,348.00	3,538,251.56	120,730.00	6,007,350.05	11,354,933.20
4	Negeri Sembilan	638,156.00	180,981.00	364,477.89	1,490,691.55	1,288,969.50
5	Sabah	7,950,954.46	1,940,289.68	2,140,965.25	8,113,591.87	9,692,832.72
6	Pulau Pinang	455,113.00	89,340.00	206,177.00	1,001,261.00	1,387,849.00
7	Kedah	555,843.00	317,165.60	259,935.00	1,168,050.03	1,238,517.43
8	Perak	683,386.30	173,389.00	148,969.00	648,290.00	684,081.00
9	Sarawak	4,547,507.91	1,263,052.06	820,246.50	1,876,495.10	3,286,653.62
10	Kelantan	60,825.00	47,364.00	218,809.50	190,173.50	222,945.00

*continued on following page*

Table 3. Continued

Number	Homestay	Generated income from homestays (MYR)				
		2019	2020	2021	2022	2023
11	Terengganu	1,078,952.50	400,420.00	72,900.00	428,140.00	2,775,238.00
12	Melaka	1,303,604.52	209,190.00	575,891.00	1,897,314.00	1,352,141.04
13	Labuan	427,710.00	127,430.00	307,107.00	1,674,361.75	319,799.00
14	Perlis	183,199.09	45,008.76	19,445.00	90,010.29	198,437.00
Total		29,661,736.78	9,124,122.66	6,126,302.14	28,556,503.14	40,457,321.51

*Note.* MYR = Malaysian Ringgit. Source: Ministry of Tourism, Arts, and Culture (2024).

Although homestays have become a substantive part of the Malaysian tourism industry, there are multiple challenges to be addressed. First, many homestay operators still use obsolete manual systems, limiting efficiency and market exposure. Recent literature has not addressed how these homestays might be modernized for the digital economy and made relevant to present-day collaborative platforms (Zhu et al., 2021). Additionally, previous research has not examined challenges faced by small and rural businesses, whose inability to adopt to smart tourism technologies has put them at a disadvantage (Osman et al., 2020).

Despite increased tourism in Malaysia’s post-pandemic recovery, the lag between policy specifications and grassroots practice remains an urgent issue. A notable lack of studies, for example, have assessed how regulatory frameworks have served homestay operators since COVID-19 (Pan et al., 2022). Furthermore, digital transformation is necessary; however, no models have yet established a comprehensive smart homestay framework built on public–private partnerships, quality assurance, and technology adoption (Cheshmehzangi, 2025). Finally, extant studies have not addressed the influence of digitization on the socio-cultural and environmental sustainability of homestays, especially regarding the balance of preserving cultural heritage while increasing financial competitiveness (Rasoolimanesh et al., 2020). It is necessary to fill these research gaps to guarantee the long-term success, flexibility, and sustainability of the homestay industry in Malaysia, as well as that of other tourist destinations.

This study investigated how MOTAC’s homestay operators adapted to the collaborative digital economy, assessed benefits and challenges, and proposed a new model for MOTAC homestay management. The study aimed to improve operations, enhance tourist experience, increase homestay sustainability, and obtain governmental support. In addition, the research aimed to assist policymakers and industry professionals regarding enhancing the feasibility and sustainability of homestay businesses through strategic partnerships.

## LITERATURE REVIEW

### The Rise of the Homestay Sector

Malaysian tourism has evolved due to homestays, an industry that emerged from travelers’ desire for unique, cultural experiences. Homestays have provided cultural exchange and interaction through hospitality, supplementing the experiential tourism trend (Li et al., 2020). By utilizing collaborative economic practices and sustainability, Airbnb has generated both economic impacts and positive changes (Vila-Lopez & Küster-Boluda, 2022). Integrating homestays into the Malaysian economy has been challenging, especially regarding expanded regulation and issues of quality assurance (Dredge, 2017). The relationship between public and private sectors, however, has improved resource sharing, improved service quality, and increased the sector’s competitiveness; cooperation between stakeholders



has enhanced traveler experience and boosted the creation of bespoke services—ultimately increasing tourist satisfaction and brand loyalty (Attanasio et al., 2021; Baporikar, 2020).

### **Homestay Management and Stakeholder Collaboration**

Homestays are a form of community-based tourism, allowing tourists to stay with a local household and giving them a unique cultural experience. Homestays create both a quality experience for tourists, a sustainable income for the homestay operators and an economic boost for local communities (Suardana et al., 2024). Another important factor in homestay management has been community participation; homestays have allowed tourists to become a part of the community, hence encouraging tourist involvement in resource management and the conservation of tradition and culture. Any difficulties have been able to be solved, and opportunities harnessed, through the collaboration of stakeholders with various community-based partnerships (Dong, 2024).

Marketing and promotion strategies have included online tools, social tools, and online booking systems (Alkhatib & Bayouq, 2021). Some relevant issues have included quality management and service standards, where conformity procedures, quality control, and evaluation methods have played a significant role in enhancing service quality and guest satisfaction (Osman & Zakaria, 2020). Homestay operators have benefitted from having their knowledge, skills and resources regularly updated so that homestays can continue their steady growth and success (Osman & Zakaria, 2020).

### **Stakeholders' Engagement**

Stakeholder involvement has been a significant contributor to the successful management of homestays. These stakeholders have included government bodies, tourism operators, members of local communities, non-governmental organizations, academic and research institutions, the private sector, media and marketing agencies, and international organizations. Smart technologies have enabled greater participation by these diverse stakeholders in tourism planning, decision-making, and knowledge sharing—helping to preserve Malaysia's cultural heritage (Buhalis et al., 2023; Lonescu & Sârbu, 2024). For example, Baran and Karaca (2024) provided a website through which people could register locally on the homestay platform. In addition, this site introduced tourists to the region's culture and experiences, using augmented reality and multimedia content. This approach created engaging experiences that have helped visitors better understand and appreciate local traditions and activities.

Diaz et al. (2024) proposed an improved system for garnering tourist feedback by employing natural language processing and sentiment analysis, helping both homestay operators and community members to address problems in a timely manner and make any necessary changes. Virtual reality platforms enabled policy makers and designers to explore and visualize potential homestay developments, contributing to realistic and generative planning discussions (Prakash et al., 2024). Pereira et al. (2022) created a smart community involvement platform linking homestay operators and managers with their local communities. This framework engendered collaboration, resource sharing, and promoted a unified and welcoming atmosphere for tourists through homestay experiences. encouraged a unified, attractive atmosphere for tourists using homestays. Bulchand-Gidumal et al. (2023) studied the incorporation of artificial intelligence into homestay management, where AI-powered assistants offered live interaction with guests and provided homestay operators with both advice and direct communication with guests and the wider community, all of which facilitated cooperation with AI, fostering dynamic interactions and integrating AI assistants into external activities.

Despite the many benefits of smart technology, however, there have been problems needing to be addressed—low or inconsistent levels of digital literacy across different sectors of society, insufficient infrastructure, and cyber security concerns, for example. All these issues need to be resolved through by collaborating, building capacity initiatives, and generating state-of-the-art security systems (Astanakulov et al., 2025).



## Theoretical Foundations

This study drew upon two key theories: unified theory of acceptance and use of technology 3 (UTAUT3), and stakeholder theory (ST). These theories were used to identify constructive involvement of stakeholders to improve the profitability and sustainability of the homestay sector.

### UTAUT3

From a qualitative perspective, UTAUT3 has functioned as an interpretive structure revealing the cultural values at play when users interact with technology. UTAUT3 has proved a useful provider of both research interview structures and thematic coding structures, because it has aided understanding of operator interactions within the collaborative digital economy domain. Venkatesh et al. (2012) transformed UTAUT3 through developing the original model by blending foundations of the theory of reasoned action with the theory of planned behavior.

This study used qualitative methods, including narrative inquiry and thematic analysis, to examine how identified constructs appeared in the daily operations of MOTAC homestay operators, expanding existing knowledge of technology adoption beyond traditional factors such as habit and hedonic motivation (Thanigan et al., 2021).

### Stakeholder Theory

Stakeholder theory enabled this study's examination of how stakeholders in the tourism and hospitality sector interacted with each other (Freeman, 1984). The theory provided valuable insights into how stakeholders collaborated to maintain homestay standards and improve business competitiveness (Attanasio et al., 2021). According to Wayan et al. (2024), stakeholder theory provided tourism management with systems with which to recognize stakeholder response and activity in their role regarding planning and development strategies. Stakeholder theory made it clear that all stakeholders deserved both fair contributions and equal access to adequate benefits, and that they should receive these concurrently. The theory enhanced strategic models by integrating diverse stakeholder perspectives, enabling value creation through collaborative interactions.

## METHODOLOGY

The methodology of this study involved qualitative research. According to Gioia (2021), qualitative research's advantage is its flexibility, allowing researchers to adapt as they go and reflect deeply on what they observe. For this study, it enabled a rich, detailed understanding of the operational dynamics affecting the homestay industry, often through in-depth case studies and close examination of real-life situations (Gioia, 2021).

The open-ended, semi-structured, face-to-face interviews were divided into two phases. In the first interview phase, to ensure that the right participants were selected, the researchers requested the MOTAC homestay coordinator to recommend the most active MOTAC homestay operators, as recognized by MOTAC, to be interviewed (Table 4).

**Table 4. List of Active Ministry of Tourism, Arts, and Culture Homestay Selangor Operators**

Number	Homestays in Selangor	District	No. of Active MOTAC Homestay Operator
1	Banghurus	Sepang	30
2	Sg. Hj. Dorani	Sabak Bernam	12
3	Air Manis	Sabak Bernam	11
4	Batu 23, Sg. Nibong	Sabak Bernam	6
5	Sg. Sireh	Sabak Bernam	4
6	Sepintas	Sabak Bernam	7
7	Papitusulem	Sabak Bernam	11
8	Bougainvilla	Gombak	9
9	Kg. Endah	Kuala Langat	6
10	Kg. Sg. Lang Tengah	Kuala Langat	7
11	Batu Laut	Kuala Langat	1
12	Kg. Kundang	Kuala Langat	6
13	Kanchong Darat	Kuala Langat	7
14	Sg. Tenggi	Hulu Langat	-
15	Sg. Sembilang	Kuala Selangor	5
16	Felda Bukit Cherakah	Kuala Selangor	9
Total			131

*Note.* Sg. = Sungai; Kg. = Kampung. Source: Ministry of Tourism, Arts and Culture, Malaysia, (2024)

For the second phase, the chairman of the Malaysian Private Homestay Association (MPHA) was interviewed, as were 13 government officers. These officers were directly involved in homestay planning and execution, at both federal and state levels. (For clarification, “federal” refers to Malaysia’s national government, responsible for policies and laws affecting the country as a whole; “state” is regional governance, with the implementation of laws and policies specific to each state.) The names of the government officers were obtained from a government website (Table 5). Regarding MPHA, a government officer provided contact information.

**Table 5. List of Government Officers**

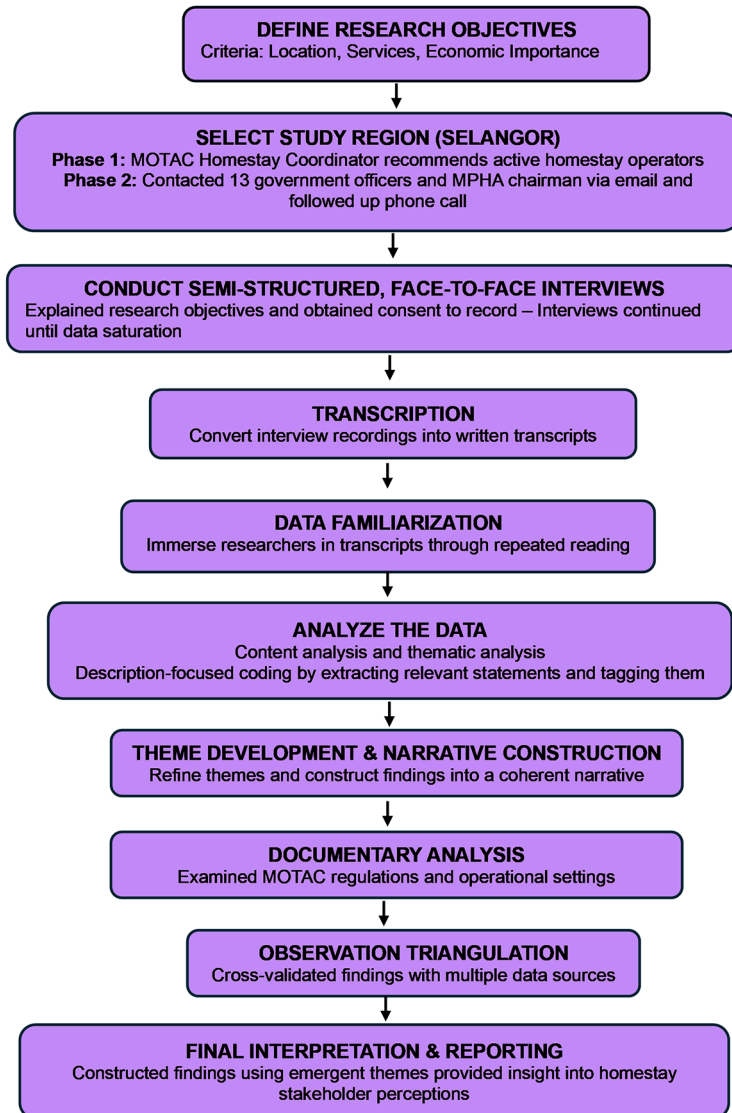
Number	Government officer
1	Ministry of Tourism, Arts and Culture (MOTAC, Putrajaya)
2	Ministry of Tourism, Arts and Culture (MOTAC, Selangor)
3	Malaysia Tourism Promotion Board (MTPB)
4	Tourism Selangor Sdn Bhd (TSSB)
5	Plan Malaysia, Ministry of Local Government (R&D)
6	Plan Malaysia, Ministry of Local Government (Legal Division)
7	Ministry of Investment, Trade and Industry (MITI) (Department of Standards Malaysia)
8	Malaysia Productivity Corporation (MPC)
9	Malaysia Digital Economy Corporation (MDEC)
10	Institute for Rural Advancement, Ministry of Rural Regional Development (INFRA)
11	Kuala Langat Municipal Council (KLMC)
12	Sepang Municipal Council (SMC)
13	Sabak Bernam District Council (SBDC)

Prior to being interviewed, participants were asked for permission to record the sessions, and the research objectives were explained. Selangor was selected as the focus of this study due to its strategic location, diverse and well-established tourism services, unique regional features, and its vital role in

contributing to Malaysia's overall economic growth. These factors made it an ideal setting for exploring the dynamics of the homestay industry and gathering meaningful insights from stakeholders. Through purposive sampling, only the active participants who were involved with MOTAC-registered homestays were directly accessed; this strategy ensured the collection of contextual data essential for in-depth analysis.

The aim of qualitative research is not the production of statistically generalizable results, rather, sample size adequacy is typically determined by the point of saturation, when additional data no longer yield new insights or themes (Bouncken et al., 2025). Accordingly, once data had been collected, a written transcription was developed to facilitate analysis—this transcript was closely examined; content and thematic analysis were the methods used. Description-focused coding was undertaken by extracting relevant statements and tagging them, followed by coding, whereby the transcripts were read several times to glean recurrent themes. The emerging, explicating, and labeling process involved revisiting identified themes, as well as synthesizing the findings into a coherent narrative. Documentary analysis helped give context to MOTAC's homestays by examining their regulatory and operating settings. Lastly, observation triangulation served as an enhancement mechanism to validate research results by combining information obtained from multiple data sources. By comparing and cross-checking information from multiple sources, the findings were made robust and trustworthy (Figure 1).

Figure 1. Qualitative Methodology Process Flow Diagram



## RESULTS AND DISCUSSION

### Findings: In-Depth Interviews From MOTAC Homestay Operators

#### *Theme 1: Homestay Management and Smart Technology*

AI has enhanced service operations and performance of homestays, alongside increasing customer satisfaction levels (Bulchand-Gidumal et al., 2023; Prakash et al., 2024). Besides their use in bookings, AI-based chatbots have enabled hosts to provide individualized guest interactions that combine quick transactions with personalized suggestions (Astanakulov et al., 2025; Pereira et al., 2022). AI systems have enhanced consumer satisfaction by providing immediate communication access alongside customized services, in tourism more broadly and in homestay operations more specifically (Buhalis et al., 2023; Lonescu & Sârbu, 2024).

Research findings indicated that homestay operators from Air Manis (Respondent 16), Kg Batu Laut (Respondent 50), Kg Sg Lang Tengah (Respondent 58), Kg Kundang (Respondent 70), Kanchong Darat (Respondent 61), Kg Endah (Respondent 68), Banghuris (Respondent 64) and Kampung Ulu Chuchoh (Respondent 67), were willing to adopt smart technology for homestay management to stay current with technological and industry developments. These responses aligned with the findings by Alkhatib and Bayouq (2021), who noted that small tourism operators achieved improved service quality and competitiveness by embracing technology. Additionally, it was consistent with Seyyedamiri and Khosravani (2020), who revealed that the need to innovate and improve both customer satisfaction and sustainability drove smart technology adoption. These similarities indicated that rural homestay providers were currently increasingly aware of the ways digital transformation was necessary to survive and thrive in a rapidly changing tourism environment. A homestay operator from Kg Kundang (Respondent 70) stated:

*Today's technology is getting more advanced ... we have no problem accepting and adjusting to the latest technological developments ... I am willing to learn to use smart technology to stay up-to-date ... we must follow the trends to stay relevant ... I'm also ready to learn and use the latest technology if proper training is provided by the government.*

These perspectives aligned with findings reported by Osman and Zakaria (2020), who pointed out that a positive attitude and openness to technology were major determinants regarding prosperous digital adoption in rural tourism. It was discovered that the more operators experienced technology as beneficial and were given enough resources, the more they used digital tools. On the same note, Efiong and Adegbola (2020) pointed out that small-scale tourism providers were much closer to being technology-ready and digitally literate when there was access to training and state-funded support. These findings were supplemented by a willingness to learn exhibited by respondents, and the focus on government training to empower rural citizens in the digital economy.

## **Theme 2: Homestay Management and Smart Payment**

Smart payment technology has been shown to enhance guest convenience by allowing secure transactions during the booking process. This has aligned with the broader trend of digital transformation within the hospitality industry, where the ability to offer multiple payment methods, including mobile wallets and online payment gateways, has played an important role in meeting the expectations of tech-savvy travelers (Thanigan et al., 2021). Lonescu and Sârbu (2024) emphasized that smart payment systems helped enhance customer trust by providing secure, cashless transactions, which have become particularly important in the post-pandemic tourism landscape. The shift toward contactless payments has reduced the physical exchange of cash, making it a preferred option for health-conscious travelers and contributing to a better guest experience in homestay settings.

Interview results showed that all homestay operators strongly agreed on having a system for making payments. Homestay operators from Kg Batu Laut (Respondent 50), Kg Sg Lang Tengah (Respondent 58), Kg Kundang (Respondent 70), Kanchong Darat (Respondent 61), Kg Endah (Respondent 68), Banghuris (Respondent 64), and Kampung Ulu Chuchoh (Respondent 67), were very supportive of having a system to assist with receiving payments. As mentioned by a homestay operator from Kg Kundang (Respondent 70): "Guests usually make payments in case ... however, I also agree with online payments."

Meanwhile, according to a homestay operator from Kanchong Darat (Respondent 61): "I prefer online payments for larger amounts ... I also would like to suggest that there should be a center at the homestay to handle bookings, online payments, and provide training."

These findings aligned with suggestions from Vukasović and Mihač (2021), who stressed improving rural tourism businesses through the adoption of enhanced digital payment systems to increase transparency, convenience, and monetary safety. Likewise, Van Huy et al. (2019) discovered that centralized booking and payment systems helped improve the function of management, raised customer confidence, and improved efficiency among community-based tourism providers.

### *Theme 3: Homestay Management and Smart Assistants*

AI-based chatbots with virtual assistants replied directly to guest inquiries instantly about check-in procedures, local recommendations and homestay amenities (Bulchand-Gidumal et al., 2023; Lonescu & Sârbu, 2024). The availability of these technologies allowed for reliable guest assistance, and through them guests enjoyed a better overall experience (Baran & Karaca, 2024; Diaz et al., 2024). All homestay operators demonstrated a readiness to adopt smart technology, because of it being a key part of contemporary society (Astanakulov et al., 2025; Buhalis et al., 2023). The registered homestay operators from Air Manis (Respondent 16), Kg Batu Laut (Respondent 50), Kg Sg Lang Tengah (Respondent 58), Kg Kundang (Respondent 70), Kanchong Darat (Respondent 61), together with Kg Endah (Respondent 68), Banghuris (Respondent 64), and Kampung Ulu Chuchoh (Respondent 67), declared: “We have no problem using technology such as smart assistance because we understand the importance of staying current with trends.”

The willingness of respondents to use smart technology, and the understanding of the importance of keeping up to date with trends, was consistent with UTAUT3, where performance expectancy and effort expectancy were factors contributing to technology adoption (Venkatesh et al., 2012). People tended to adopt technology easily when they felt that technology was helpful and convenient. In a similar fashion, Pereira et al. (2022) stressed that perception of digital trends and usefulness contributed to technology acceptance, especially in the tourism industry. This statement reflected not only the recognition of technology’s relevance but also the willingness to adopt smart technology. This supported previous findings that attitude, perceived benefits, and contextual motivation were key factors in digital adoption. A homestay operator from Kg Kundang (Respondent 70) expressed mixed feelings about Chatbot technology: “I do not oppose Chatbot technology ... but I am struggling to find younger users interested in managing homestays.”

### *Theme 4: Smart Tourism Promotion*

Traditionally, homestay operations have been organized manually—the customer has contacted the homestay directly. Today, social media is used to promote homestays, eliminating geographical boundaries that may have prevented direct communication between homestay hosts and guests. Social media channels such as Instagram, Facebook, and YouTube have functioned as tools for building engaging digital content that has helped potential tourists discover the uniqueness of homestays (Baran & Karaca, 2024; Buhalis et al., 2023). The visual approach in marketing has presented operators with an opportunity to display authentic local features, thereby setting themselves apart from regular accommodation. Research has demonstrated how AI algorithms have tracked user preferences and activities through social media to achieve enhanced targeted marketing, as a part of smart tourism promotion (Lonescu & Sârbu, 2024).

Despite these advancements, research has indicated that registered homestay operators have possessed limited digital skill abilities (Kurniati & Suryanto, 2023; Osman & Zakaria, 2020). The interview findings showed that most registered homestay operators demonstrated poor expertise regarding technology usage for promotional purposes, particularly regarding social media. One homestay operator from Kanchong Darat (Respondent 61) stated: “I do not know how to use social media, but I am willing to learn if training is provided.” Meanwhile, a homestay operator from Kg Endah (Respondent 68) noted: “I have Facebook, but my children help me with all the posting ... I only have basic skills in using smartphone apps like WhatsApp.” A homestay operator from Banghuris (Respondent 64) mentioned: “I have Facebook and basic skills in using technology, and I believe that technology can help improve homestay promotion.” A homestay operator from Kg Kundang (Respondent 70) stated: “I have a social media account and can use it ... the use of technology is important now to follow the current trend.” Reflecting on the findings of Pereira et al. (2022), the homestay operator from Kampung Ulu Chuchoh (Respondent 67) explained: “I have my website for promoting my homestay and my children operate the site.”



### *Theme 5: Digital Collaborative Economy and Smart Partnership*

In tourism and hospitality, smart partnerships have utilized technological systems and joint ventures to enhance service quality and market competitiveness (Attanasio et al., 2021; Buhalis et al., 2023; Dong, 2024). Research data showed that many homestay operators demonstrated an openness to inter-agency collaboration if it enhanced their own operations. Homestay Sepintas partnered with homestay Air Manis, for example, enabling them to host 40 Japanese visitors. Respondent 30 at Homestay Sepintas explained their role in helping homestay Air Manis arrange Japanese visitor accommodation, noting: “Homestay Air Manis fully manages all activities including cultural experiences that include *Wau*-making and a firefly tour.”

The successful partnership between Sepintas and Air Manis demonstrated the positive effects of two organizations working together to provide additional services to accommodate large tourist groups (Dong, 2024). The significance of strategic homestay partnerships for enhancing service delivery and industry competitiveness supported previous studies (Attanasio et al., 2021). Furthermore, Respondents 16, 50, 58, 70, 61, and 68 from Air Manis, Kg Batu Laut and Kg Sg Lang Tengah, Kg Kundang, Kanchong Darat, and Kg Endah, expressed interest in collaborating with either unlicensed homestays or additional regional groups that might enhance their own homestay experience (Kurniati & Suryanto, 2023; Pereira et al., 2022).

### *Theme 6: Wider Homestay Problems*

The interviews revealed that registered operators expressed dissatisfaction with the lack of enforcement when it came to unregistered businesses—a well-documented issue (Kurniati & Suryanto, 2023). This tension between registered and unregistered operators represented a significant challenge in the homestay sector (Litheko, 2022). Respondents from homestay Bougainvillea and homestay Sungai Hj Dorani agreed that the absence of regulation had contributed to an unfair, competitive landscape, where unregistered operators were able to offer features that were financially inaccessible to registered homestays.

This issue of unregulated competition aligned with broader challenges identified in homestay management and regulation (Malaysian Standard, 2022; Pereira et al., 2022). The lack of comprehensive regulatory frameworks has created market inequities impacting registered operators’ ability to compete effectively (Dong, 2024). As mentioned by the homestay operator from homestay Sungai Hj Dorani (Respondent 24): “The policy is still loose where MOTAC has not come out with any act for an unregistered homestay, so then people think that homestay is about accommodation business.”

Similarly, homestay operators from Kg Batu Laut (Respondent 50), Kg Sg Lang Tengah (Respondent 58), Kanchong Darat (Respondent 61), and Banghuris (Respondent 64), confirmed that competition from unregistered homestays had negatively impacted their businesses. In contrast, Sg. Semilang homestay saw competition from unregistered operators as healthy, relying on its unique “X-factor” to attract visitors, despite the presence of unregulated competitors. As noted by the homestay operator from homestay Sg. Semilang (Respondent 18): “We believe in healthy competition ... competition is good ... it doesn’t matter how many illegal homestays exist because we believe in each other’s sustenance ... if we can provide better facilities and there must be the X-factor, people will come again.”

This alternative perspective on competition aligned with research on successful homestay business models (Buhalis et al., 2023), and the importance of developing unique value propositions in the tourism sector (Alghamdi & Bogari, 2020). Quality service, along with distinctive features, has operated as a competitive advantage in line with recommendations for sustainable tourism development (Rasoolimanesh et al., 2020).

### *Theme 7: The “Inside” Problems of Homestay*

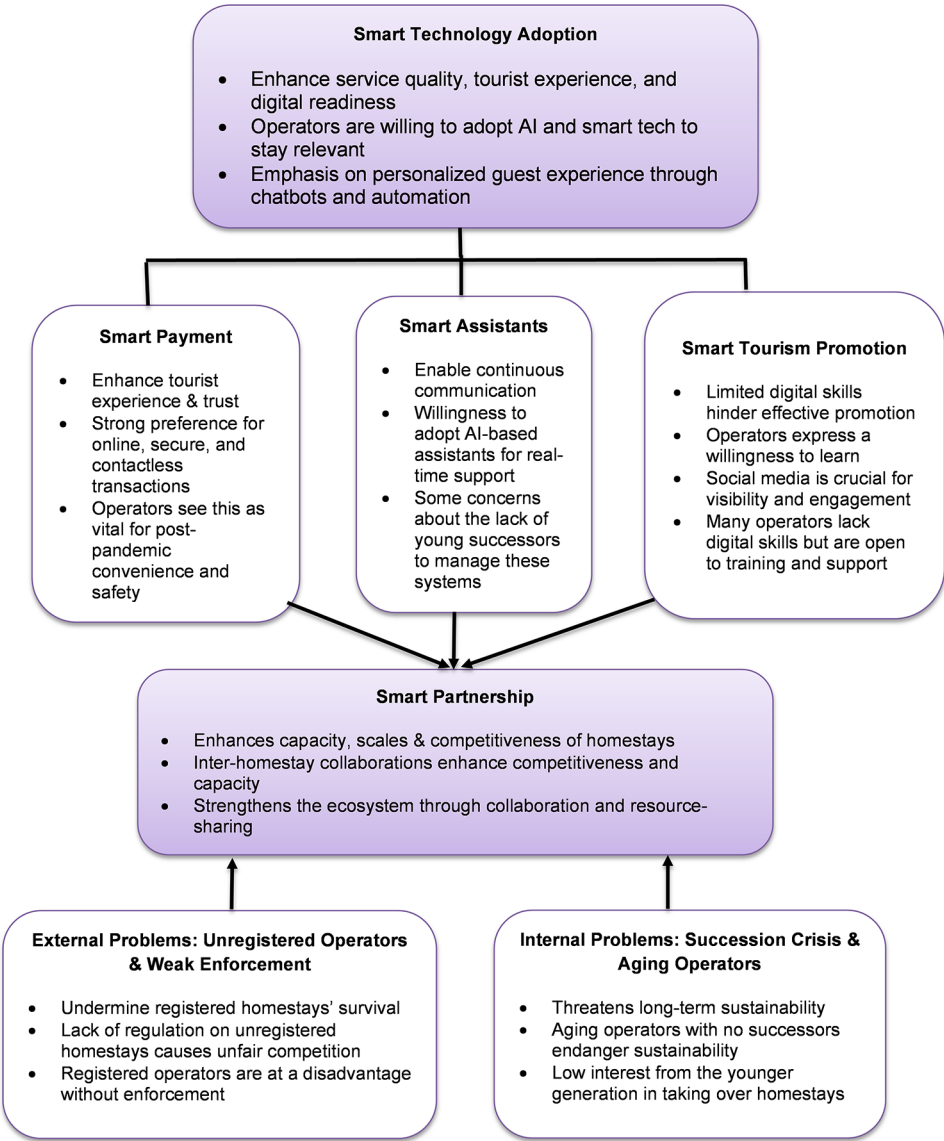
According to Foo et al. (2020), the COVID-19 outbreak negatively impacted most homestay operations, either by reducing customer numbers or elevating operational expenses, which impeded

equipment upkeep and business operation costs. The Malaysian tourism industry experienced a notable impact that required homestay operators to implement new operational adjustments (Kurniati & Suryanto, 2023). The decline of homestay operators due to inconsistent income from community-based homestays has prevented the new generation from taking over, thus putting the sustainability of homestay ventures in Malaysia at risk (Dong, 2024). The challenge of operator succession has paralleled broader tourism efforts aimed at developing sustainable communities (Rasoolimanesh et al., 2020).

According to Litheko (2022), the absence of successors in most homestays has represented a critical threat to the long-term viability of the homestay program. The homestays successful in passing operations to successors, such as the Banghuris homestay, were rare (Pereira et al., 2022). A homestay operator from Kampung Ulu Chuchoh indicated (Respondent 67): “Many operators age or die while their absence of successors to preserve homestay legacy represents a major concern.” This has created a major sustainability problem (Suardana et al., 2024). To address this, youth engagement strategies for homestay operations have been deemed essential (Pereira et al., 2022).

Figure 2 summarizes MOTAC homestay digital transformation and challenges, as gleaned from in-depth interviews with MOTAC homestay operators.

Figure 2. Ministry of Tourism, Arts, and Culture Homestay Digital Transformation and Challenges: Key Findings



## Findings: In-depth interviews from Government Officers and the Malaysian Private Homestay Association

### Theme 1: Industry Challenges and Regulatory Framework

During an in-depth interview with Respondent 8 from the Malaysia Productivity Corporation, several regulatory issues pertinent to the homestay industry in Malaysia were identified, reflecting challenges documented in recent research (Kurniati & Suryanto, 2023; Litheko, 2022). As stated by (Respondent 8):

*There are debates on the need for documentation and approval of compliance or requirements for compliance ... certain compliance features that cannot be implemented fully due to the regulations ... there is no clear policy, mechanism, or standard to regulate homestay businesses in Malaysia ... at the moment ... the current structure of governance works under multiple authorities*

*including local government (PBT), Ministry of Tourism, Arts and Culture (MOTAC), and Ministry of Housing Local Governments (KPKT) ... due to the existence of multiple authorities that have jurisdiction over homestay businesses, there's usually a conflict of authority.*

The challenges of multi-authority governance and regulatory compliance aligned with findings from several studies examining homestay management frameworks (Dong, 2024; Kurniati & Suryanto, 2023; Litheko, 2022; Pereira et al., 2022). The conflict between different authorities' jurisdictions represented a significant challenge in implementing effective regulatory frameworks. Moreover, Respondent 14 from MPHA highlighted that:

*There are still many private homestay operators remain unregistered with MOTAC due to its strict guidelines ... although these operators have legally registered their companies with the Companies Commission of Malaysia (CCM), they are still considered illegal homestays without MOTAC registration.*

The scale of the private homestay sector in Malaysia has been estimated to contain approximately 411,100 registered operators on the Homestay Malaysia Facebook page, administered by MPHA. This issue of unregistered operators, despite CCM registration, has reflected broader challenges in homestay regulation and standardization (Kurniati & Suryanto, 2023). The strict MOTAC guidelines and their impact on registration rates have been noted as a significant factor in the industry's development (Buhalis et al., 2023). The scale of the private homestay sector, with approximately 411,100 registered operators on the Homestay Malaysia Facebook page, demonstrated the significant growth of this sector. Furthermore, Respondent 14 from MPHA noted that:

*There are 25,691 applications are waiting for approval before being enlisted with the list of active homestay operators, as the administration has to ascertain the originality of these companies to avoid scams ... it also demonstrates great potential for further expansion of this.*

The large number of pending applications and the need for verification processes has reflected the growing importance of proper documentation and verification in the homestay sector, particularly in terms of preventing fraud and ensuring quality standards (Baran & Karaca, 2024; Pereira et al., 2022). This situation has indicated the sector's potential for growth, while highlighting the need for streamlined registration processes (Malaysian Standard, 2022).

## **Theme 2: Infrastructure, Digital Assets, and Records Management**

Respondent 13 from MITI mentioned that: "Technological support, information systems, and data management appear to be pertinent sectors that the homestay industry needs to improve in soon." This observation aligned with current research highlighting the critical role of technology in modern tourism management (Buhalis et al., 2023; Diaz et al., 2024). It was supported by Respondent 5 from MDEC, who said:

*There are huge digital issues in the given sector ... on appropriate digital platforms, effective data gathering systems, and secure online booking systems ... that the firms need to come up with sound digital solutions in a bid to support secure transactions, property tours, and reliable booking methods ... the absence of digital standards has led to cases fraud and failure to come up with proper security measures in the industry.*

These concerns about digital infrastructure and security have been well-documented in recent literature. Baran & Karaca (2024) emphasized the importance of data privacy and safety in hospitality technology usage, while Kurniati and Suryanto (2023) addressed cybersecurity awareness among homestay operators. The need for secure digital platforms and standardized systems has been further supported by research showing how technology acceptance impacts tourism services (Pereira et al., 2022). The challenges regarding secure transactions and reliable booking methods aligned with findings from Bulchand-Gidumal et al. (2023), who studied the impacts of digital communication on guest-host relationships.

Furthermore, Kurniati and Suryanto (2023) documented the specific challenges of digital transformation for rural homestay businesses, highlighting the need for comprehensive digital

solutions. The issues of fraud and security measures reflected broader concerns in the tourism industry regarding trust and safety on digital platforms, particularly in the context of emerging digital economies and online booking systems (Diaz et al., 2024; Pereira et al., 2022).

### **Theme 3: Strategizing Against Unregistered Homestays**

Homestay operators registered with MOTAC have faced major challenges in competing with unregistered homestays, especially private short-term rental accommodations (STRA) that have disguised themselves as legal homestays but are without MOTAC registration. This has not only eroded the confidence of consumers in the registered operators but has had the effect of confusing consumers into thinking that all homestay service providers are registered and conform to required standards (Litheko, 2022). This competitive imbalance has worsened, as legal homestay businesses, that aim to provide safe and quality accommodations, have faced income loss or even the risk of closure; it has been especially difficult for those operating through weaker market channels (Pereira et al., 2022). This lack of regulation in the STRA sector has had significant implications for hospitality quality and infrastructure (Malaysian Standard, 2022). Respondent 1 from MOTAC explained: “The lack of regulation not only affects the quality of the hospitality experience but also puts extra pressure on supporting infrastructures.”

These challenges have aligned with broader issues identified in the homestay sector (Baran & Karaca, 2024; Pereira et al., 2022), particularly regarding the distinction between registered and unregistered operations. Respondent 2 from MTPB noted:

*The public embrace of STRA concept has prompted all the unit owners within residential buildings opt for short time lets than long-term tenancies hereby changing housing and community accessibility and stability ... overall, these factors underscore the need to address the emerging complications associated with unregulated STRAs practices.*

Respondent 2, regarding the homestay banner or homestay promotion on social networking sites, expressed that:

*The tourist is put in a confusing situation having to think that such homestay banners or promotions belong to MOTAC but in reality, they do not ... this confusion poses a problem to the practical legitimate homestay business that adhere to set standards and legal requirements.*

Aware of this problem, the Malaysian government has addressed the issue with a set of general planning principles for STRA. This has represented a significant step toward addressing regulatory challenges (Malaysian Standard, 2022). The Selangor State Tourism Purification Program (P3S) has aligned with recommended approaches for homestay management and regulation (Kurniati & Suryanto, 2023). Respondent 6 from KLMC highlighted:

*The council's current efforts to develop comprehensive guidelines for the unregistered homestay program ... the Selangor State Tourism Purification Program (P3S) aims to assist homeowners and accommodation providers by clarifying the application process for licenses and outlining the operational requirements needed to ensure that tourism accommodations are managed in an orderly and regulated manner.*

Respondent 6 noted: “Many homestays operate without the necessary approvals primarily because owners lack clarity regarding the operational procedures, compounded by the absence of formal guidelines, policies, and incentives to encourage compliance.”

The issue of unregistered operations has stemmed from various factors, including the lack of clear operational guidelines and formal policies (Buhalis et al., 2023). In detailing the steps necessary for registration in the P3S, Respondent 6 outlined a structured process:

*Firstly, operators are required to register for the P3S program and sign the program compliance form ... secondly, they must apply for planning permission, which involves submitting a landscape plan and tree inventory, in addition to appointing a registered town planner and landscape architect ... following this, operators need to apply for a temporary business license, which is granted upon submission of the planning permission application to the local central unit ... the*

*subsequent steps include resolving any land use issues through permits, applying for building plan approvals or temporary building permits, and finally, applying for a full business license as applicable.*

This structured registration process aligned with good practices for homestay program development and reflected the importance of proper planning and documentation (Pereira et al., 2022). The framework for land use transition demonstrated alignment with sustainable tourism development principles and consideration for preserving local agricultural landscapes (Rasoolimanesh et al., 2020). Turning to Respondent 7 from the Sabak Bernam district council, the discussion revealed that the council's P3S initiatives included a detailed framework for applicants seeking to convert land use from agriculture to residential for homestay development. Respondent 7 emphasized:

*Applicants must submit a limited-period planning permission application, facilitated by a qualified town planning consultant ... such developments are permissible as long as they do not exceed 20% of the total area of the agricultural land ... this provision allows for the issuance of a special permit without necessitating a formal change in land category, following Section 115(4) (a) of the National Land Code (KTN) ... the intention is to preserve the agricultural landscape, specifically rice cultivation areas, as a key attraction while regulating development.*

However, should a development exceed the 20% threshold, Respondent 7 indicated:

*Operators would be granted a five-year period to reclassify the land use category to building status ... during this time, they may be eligible for temporary planning permits stipulated under Section 22(5)(a) of Act 172, as well as temporary permits as per the Selangor uniform building by-laws of 1986 ... once the planning permission (Form C1) is approved, applicants are required to obtain the necessary building plan approvals and temporary building permits from the building control department, followed by business license approval from the licensing department.*

This multi-stakeholder approach to planning permission review reflected recommended practices for stakeholder collaboration in tourism development (Dong, 2024). The involvement of multiple technical departments ensured comprehensive oversight, which was crucial for sustainable homestay development (Pereira et al., 2022). Respondent 7 also highlighted:

*The benefits that licensed homestay operators can leverage, which include promotional support from Tourism Selangor SDN BHD, facilitated by the Selangor State Ministry of Tourism, Arts and Culture (MOTAC) ... this promotional backing can significantly enhance visibility and attract tourists to their accommodations.*

Finally, Respondent 7 noted:

*The collaborative nature of the planning permission review process, involving multiple technical departments, including the Sabak Bernam district and land office (PTDSB), Tenaga Nasional Berhad (TNB), state water authority (PBAN), fire department, development planning department, building control department, engineering department, landscape department, and the health and environment services department ... this inter-departmental cooperation is essential to ensure a comprehensive review of applications and adherence to regulatory standards.*

The promotional support offered through Tourism Selangor aligned with strategies for enhancing homestay visibility and marketing effectiveness (Baran & Karaca, 2024). The inter-departmental cooperation in the review process represented a model of integrated tourism planning and development that ensured comprehensive consideration of all relevant factors in homestay regulation (Buhalis et al., 2023).

#### **Theme 4: Malaysian STRA Digital Management Platform**

The Malaysian STRA industry has experienced rapid growth, creating an urgent need for a comprehensive digital management platform to regulate and streamline operations (Kurniati & Suryanto, 2023). This need has stemmed from challenges in monitoring unlicensed accommodations, ensuring safety standards, and maintaining fair competition in the market (Baran & Karaca, 2024; Pereira et al., 2022). According to Respondent 4 from PLAN Malaysia:



“Currently, PLAN Malaysia works closely with Malaysian Digital Economy Corporation (MDEC) to design the Malaysian STRA digital management platform ... this platform is designed to be a comprehensive monitoring system with various integrated modules to ensure its effectiveness.”

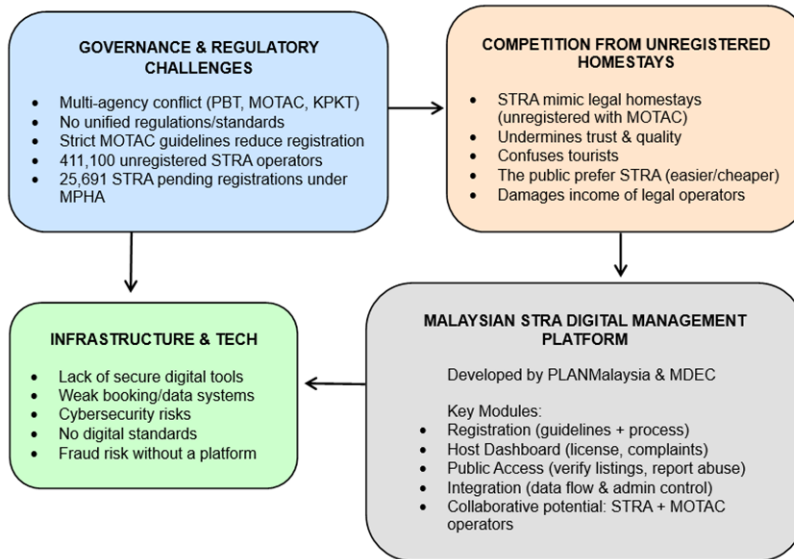
The platform’s architecture has aligned with best practices in smart tourism platform design and incorporated essential elements for community engagement (Buhalis et al., 2023). The implementation considered crucial cybersecurity aspects for homestay operators (Kurniati & Suryanto, 2023). Respondent 4 and Respondent 5 revealed:

*The platform consists of several key modules, each serving specific functions ... the STRA registration module forms the foundation of the system, incorporating two essential sub-modules: registration guidelines and the actual registration process ... this ensures that all STRA operators understand and follow proper registration procedures ... the host and operator dashboard module serves as a central control panel, featuring sub-modules for rental period monitoring, licensing management, and a complaints and notification system, enabling operators to effectively manage their properties and respond to issues promptly ... for public engagement, the public module provides transparency and accessibility through two main sub-modules: a directory of registered STRA properties and a public complaints system ... this allows the general public to verify legitimate STRA properties and report any concerns ... the integration module serves to connect various aspects of the platform, ensuring seamless data flow and communication between different components ... all these modules are overseen by system/platform administrators who manage and maintain the platform's functionality, ensuring smooth operations and proper data management.*

This has represented an opportunity for MOTAC homestay operators to establish business partnerships with STRA operators (Attanasio et al., 2021). Working with STRA operators has enhanced visibility and operational efficiency, while ensuring optimal guest experiences (Dong, 2024). When faced with strong business competition, solo homestays have struggled to compete with larger players and faced higher overhead costs, due to a lack of shared services (Baporikar, 2020). The small-scale MOTAC homestay operators have stood to benefit from collaborative approaches with STRA operators, pooling resources and contacts to increase their efficiency and profitability in a competitive market (Buhalis et al., 2023).

Figure 3 below summarizes STRA and homestay governance in Malaysia, as taken from in-depth interviews with government officers and the Malaysian Private Homestay Association.

Figure 3. Short-Term Rental Accommodations and Homestay Governance in Malaysia: Key Findings



## PROPOSED HOMESTAY MANAGEMENT MODEL TOWARD A COLLABORATIVE DIGITAL ECONOMY

The qualitative findings, drawn from interviews with homestay operators, government officials, and the chairman of the MPHA, closely aligned with Buhalis et al. (2023)'s research on developing smart tourism destinations. Buhalis et al. (2023) conceded that the adoption of cutting-edge technologies, collaborative stakeholder interaction and data-driven systems played a significant role in turning tourism environments into smart, networked ecosystems. The proposed model resembled this, since it urged the use of digital mediums in promoting communication, operation efficiency, and service innovation within homestay communities. This consistency indicated how this model illustrated the practical implementation of the theoretical aspects of smart tourism, by veering into actualized applications that improved best practices and expanded market coverage.

The model helped sustain concepts presented by Choi (2021), who emphasized the significance of community-based digital platforms in transforming tourism into a sustainable, inclusive economic system. According to Choi (2021), when local stakeholders were empowered with digital marketing, integrated communication approaches, and technological literacy, tourism competitiveness increased considerably in both rural areas and local, community-based tourism environments.

These elements were incorporated into the proposed model, which emphasized stakeholder collaboration, marketing communication, and technology-driven approaches, reflecting Choi's ideas on digital transformation that prioritize both innovation and inclusiveness with a community-based orientation (Choi, 2021). These two perspectives (Buhalis et al. (2023); Choi, 2021) influenced this model's approach to tourism in a modern context, and how this model could be effectively implemented so as to be emulated by other, similar, homestay-based tourism destinations.

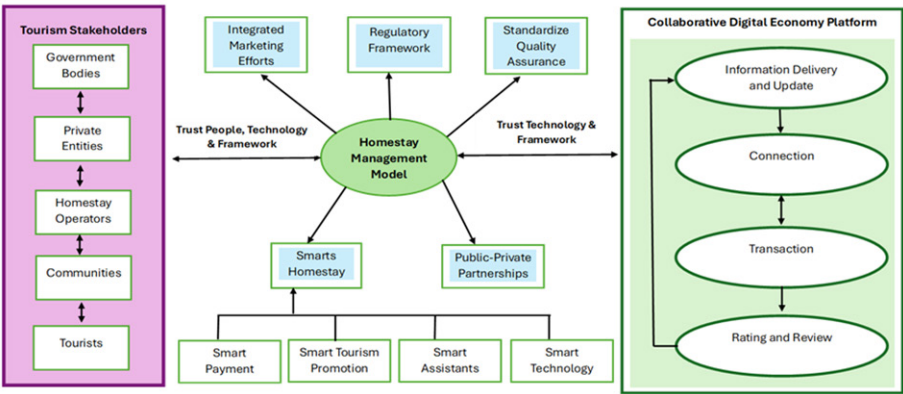
Central to this model was the homestay management model built on trust in people, technology, and frameworks (Attanasio et al., 2021). Also included were integrated marketing efforts that involved coordinating promotional activities to attract tourists through related communication media, such as Facebook and various websites (Seyyedamiri & Khosravani, 2020). The rationale was achieved through compliance with the regulatory framework that served as a legal and operational benchmark (Malaysian Standard, 2022), and standard quality assurance—both of which helped maintain the

quality of services provided in homestays. In Malaysia, standard quality assurance has worked with the Malaysian standard sharing economy, which has stipulated values of integrity, transparency, accountability, accessibility, respect for others, and competence of the participants (Malaysian Standard, 2022).

Collaboration between homestay operators, government agencies, and private sector players has been—and remains—crucial for sustainable growth (Suardana et al., 2024). A public–private partnership model has facilitated this collaboration (Litheko, 2022), with the government providing financial incentives or subsidies for technology adoption and the private sector offering the necessary technological expertise and infrastructure. Additionally, it has been proposed that a digital platform be developed to centralize marketing efforts (Kurniati & Suryanto, 2023), enabling homestay operators to reach a broader audience while sharing resources such as training materials and customer reviews. Moreover, the smart homestay concept has introduced technological advancements (Baran & Karaca, 2024), through four subcomponents: smart payment, smart tourism promotion, smart assistants, and smart technology categories, thereby aiming to increase organizational effectiveness and improve guest experience (Nor et al., 2025; Pereira et al., 2022).

The fundamental component of the developed model has been identified as the collaborative digital economy platform (Vila-Lopez & Küster-Boluda, 2022), which served to promote effective interaction between the involved stakeholders, enhance the timely delivery of information, and provide for electronic transactions (Alkhatib & Bayouq, 2021). It had a rating and review system to update the current service delivery in the facility (Thanigan et al., 2021). In conclusion, the model was shown to promote creativity and partnership in building a digital economy that offered the potential to transform both the experience of local homestay providers and the broader tourism sector (Lonescu & Sârbu, 2024). This is presented in Figure 4.

Figure 4. Proposed Homestay Management Model Toward A Collaborative Digital Economy



## THEORETICAL IMPLICATIONS

### UTAUT3 in Tourism: Homestays

It remains possible to improve the UTAUT3, especially regarding homestays. First, when choosing a homestay, how consumers define and valuing of issues of cultural “fit” and “authenticity” have been shown to be paramount—tourists have often sought unique and culturally rich travel experiences; furthermore, it has been demonstrated that it is important to develop technology that supports cultural nuances (Li et al., 2020). Interpersonal trust has been defined as an important factor—the guests and hosts need to trust each other; technology such as communication media and online reviews can

enhance or erode this trust (Van Huy et al., 2019). Third, guest–host interaction, through technologies such as internet messaging, has been shown to have a strong impact on the guest experience and consequently on issues related to technology adoption (Osman & Zakaria, 2020).

Peer recommendations and reviews have had the most influence on travelers, and authentic customer feedback has improved credibility in homestay and booking technologies (Vukasović & Mihač, 2021). In addition, other technologies, such as local experience augmentation through local activity apps, has increased in demand, as this aspect has assisted guests in choosing nearby attractions and therefore what type of accommodation they might enjoy (Diaz et al., 2024). Support and communication channels have been crucial, because the guest-impacting features of instant messaging and media sharing have increased levels of guest satisfaction and engagement (Alghamdi & Bogari, 2020).

A responsive digital environment, such as internet access or any other tool that enhances the process, has supported guest participation (Efiong & Adegbola, 2020). Finally, addressing privacy and safety concerns has been essential, as it has influenced guests' confidence in using homestay services, ensuring secure payment technologies and protecting their personal data. By integrating these factors into the UTAUT3 model, researchers and practitioners have understood the acceptance and usage of technology from the homestay sector for a higher-quality tourist experience and improved the market positioning of homestay businesses (Prakash et al., 2024).

## Stakeholder Theory

Stakeholder theory has explained the relationship patterns between operators and government bodies, as well as between private enterprises that function within the homestay sector (Attanasio et al., 2021). The study showed that when stakeholders worked together, their efforts successfully increased homestay operational performance and sustainability levels (Dong, 2024; Rasoolimanesh et al., 2020). The principles of UTAUT3 served as essential variables to comprehend why homestay operators embraced new technology, through examining perceptions of how easy or difficult it was to use, alongside social influence patterns which emerged as the main interview topics in this study (Alkhatib & Bayouq, 2021; Venkatesh et al., 2012).

## Practical Implications in Homestay Management

Table 6 summarizes the key practical implications of integrating a digital collaborative economy within homestay management. These implications have been categorized into specific operational areas to enhance clarity, strategic planning, and implementation.

**Table 6. Practical Implications Regarding Homestay Management**

Practical Area	Implication	Supporting source(s)
Tourist experience	<ul style="list-style-type: none"> <li>• Real-time online bookings and dynamic tariffing to enhance satisfaction</li> <li>• Predictive analytics to personalize experiences</li> </ul>	<ul style="list-style-type: none"> <li>• Buhalis et al. (2023)</li> <li>• Bulchand-Gidumal et al. (2023)</li> <li>• Vukasović &amp; Mihač (2021)</li> </ul>
Community engagement & sustainability	<ul style="list-style-type: none"> <li>• Cooperative marketing with local businesses</li> <li>• Promote waste reduction and energy efficiency</li> <li>• Peer-to-peer collaboration among hosts</li> <li>• Homestay networks and forums</li> </ul>	<ul style="list-style-type: none"> <li>• Suardana et al. (2024)</li> <li>• Kurniati &amp; Suryanto (2023)</li> <li>• Rasoolimanesh et al. (2020)</li> <li>• Vila-Lopez &amp; Küster-Boluda (2022)</li> </ul>

*continued on following page*

Table 6. Continued

Practical Area	Implication	Supporting source(s)
Pricing strategies	<ul style="list-style-type: none"> <li>• Dynamic pricing based on demand patterns, events, or segments</li> <li>• Digital loyalty programs with bonuses and promotions</li> </ul>	<ul style="list-style-type: none"> <li>• Baran &amp; Karaca (2024)</li> <li>• Pereira et al. (2022)</li> </ul>
Practical Area	Implication	Supporting source(s)
Analytical decision-making	<ul style="list-style-type: none"> <li>• Use analytics to evaluate occupancy, revenue, satisfaction</li> <li>• Analyze social media feedback for trend tracking and service adjustment</li> </ul>	<ul style="list-style-type: none"> <li>• Lonescu &amp; Sârbu (2024)</li> <li>• Prakash et al. (2024)</li> </ul>
Marketing and communication	<ul style="list-style-type: none"> <li>• Direct communication via social media</li> <li>• Use of testimonials and storytelling</li> <li>• Engagement with influencers and bloggers</li> </ul>	<ul style="list-style-type: none"> <li>• Seyyedamiri &amp; Khosravani (2020)</li> <li>• Alghamdi &amp; Bogari (2020)</li> </ul>
Training and development	<ul style="list-style-type: none"> <li>• Training in customer relations, digital tools, and sustainability</li> <li>• Participation in workshops/webinars to standardize service delivery</li> </ul>	<ul style="list-style-type: none"> <li>• Osman &amp; Zakaria (2020)</li> </ul>
Legal and compliance	<ul style="list-style-type: none"> <li>• Educate operators on local laws (short-term letting, data, consumer protection)</li> <li>• Assist in understanding insurance needs</li> </ul>	<ul style="list-style-type: none"> <li>• Baporikar (2020)</li> </ul>
Innovative payment methods	<ul style="list-style-type: none"> <li>• Accept digital wallets, cryptocurrency</li> <li>• Transparent fees and charges to boost trust</li> </ul>	<ul style="list-style-type: none"> <li>• Thanigan et al. (2021)</li> <li>• Diaz et al. (2024)</li> </ul>

## FUTURE RESEARCH DIRECTIONS

Although this study provided valuable insights into the homestay sector, there are limitations to consider. The research was focused on homestay operators in Selangor, which may not have fully represented the diverse challenges faced by operators in other regions of Malaysia. Additionally, the study predominantly explored the adoption of digital technologies that were currently accessible to operators, without addressing the significant barriers faced by those in rural or underserved areas. Future research could expand the sample size to include a broader range of regions and examine the challenges faced by homestay operators with limited access to technology.

## CONCLUSION

According to the research outcomes, the study demonstrated the significance of the collaborative digital economy model in reshaping the homestay industry in Malaysia, creating a relationship between theoretical research and practice. The management shift was founded on principles of collaboration, sharing common values, and teamwork, so that tourism stakeholders could move beyond individual transactions and establish a common movement and identity. By adopting such strategies, the homestay businesses increased customer support, developed a strong social and cultural foundation, and was supported by digital technology to expand into new markets. A wider implementation of this model can arguably lead to improved services for tourists, enhanced eco-friendly policies, enhanced pricing mechanisms, and deeper, more collaborative community relationships.

Additionally, online teamwork, particularly the use of big data, will enable homestay operators to have more control over their operations and enhanced marketing of their business in accordance with online trends. The community networking and collaborative aspects are projected to result in a more sustainable economy and more enjoyable tourism experience—for all stakeholders. In conclusion, the adoption of the digital collaboration approach to managing a homestay has been demonstrated as

significant and an approach that could result in tangible advancements for tourism across Malaysia. It will contribute to the creation of a dynamic and welcoming system that attracts a wide range of tourists and helps preserve local cultures and economies, through integrating theory with practice. It is also essential to improve this model on an ongoing basis—to reach the model’s potential and guarantee that homestays continue to play a central role in Malaysian tourism.

## **DATA AVAILABILITY STATEMENT**

The authors confirm that the data supporting the findings of this study are available within the article.

## **COMPETING INTERESTS STATEMENT**

The authors of this publication declare there are no competing interests.

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*Mrs. Noor Azma Ismail joins Information Technology with 23 years of educational expertise following her status as an AWS cloud services expert and EC-Council security management expert as well as an IPv6 network systems specialist. Mrs. Noor Azma Ismail shows expertise in cloud computing through her Cloud Practitioner Certification from AWS in addition to training in cybersecurity as an EC-Council Secure User and certification as a Network Engineer in IPv6 standards. Currently serving as a Senior Lecturer at School of Information Technology, UNITAR International University, Noor Azma is dedicated to academic excellence and fostering student success. Research on network security forms a central part of her work since she focuses on creating innovative solutions for current and future cybersecurity risks.*

*Dr. Aekram Faisal is an experienced academician and researcher in the fields of management and marketing. He completed his doctorate in strategic management at Universitas Trisakti. Dr. Faisal's research focuses on digital marketing, consumer behavior, and business strategies. His work covers various topics in marketing management, with a particular emphasis on the impact of digital technology on consumer behavior and corporate strategies. His research findings have been published in both national and international journals and presented at scientific conferences. Dr. Faisal actively contributes to community service by training small and medium-sized enterprises in digital marketing, product development, pricing, and business planning. His expertise spans various aspects of marketing management, reflecting his commitment to bridging academic knowledge with practical business applications. Currently, Dr. Faisal serves as the head of the Service Management Study Program at Universitas Trisakti.*

# Aekram Faisal FEB

## Synergizing Malaysian Homestays and the Digital Economy

 Arikel

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# Synergizing Malaysian Homestays and the Digital Economy: A Collaborative Management Model

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## ABSTRACT

During the post-COVID-19 recovery period, the homestay sector in Malaysia has faced major challenges regarding modernization and technological integration. In addition, homestay operators have struggled with issues of sustainability and the need to collaborate on digital economic partnerships. A study involving 131 homestay operators, together with 13 government officials, demonstrated that operators realized the benefits of smart technology, but lacked the digital skills necessary to grow their customer base. Other significant obstacles to industry growth included regulatory hurdles, competition from illegal homestays, and financial difficulties. Sustainable growth will require collaboration between private companies, government, and homestay operators. If assisted by the government, the private sector could adopt new technologies that might operate using a public–private partnership management framework. A digital platform, established as a marketing focal point, would connect operators with larger markets and provide shared resources to support the sustainability of Malaysia's homestay industry.

## KEYWORDS

Homestay Management, Collaborative Digital Economy, Sharing Economy, Smart Partnerships, Smart Tourism

## INTRODUCTION

The emergence of the homestay market has changed the Malaysian tourism industry, as tourists have enjoyed homestay's more personalized service. Homestay accommodation has provided cultural exposure and interaction, offering experiential tourism (Gretzel, 2019; Gretzel et al., 2020; Suardana et al., 2024). The new digital sharing landscape, with online accommodation platforms such as Airbnb, has resulted in significant impacts on both the economy and on the sustainability of the tourism sector (Vila-Lopez & Küster-Boluda, 2022). Integrating homestays into the Malaysian economy

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has presented challenges regarding restrictive policies and quality concerns—issues that can be addressed by collaboration between homestay providers, government agencies, private organizations, and tourists (Dredge, 2017).

Public–private partnerships, integrated marketing efforts, regulatory frameworks, standardized quality assurance, technology, and quality systems are all crucial if Malaysia wishes to increase competitiveness, collaboration, and service quality in the homestay sector (Litheko, 2022), and the combined efforts by various stakeholders can provide integrated homestay products and services that will enhance tourists’ loyalty and engagement (Attanasio et al., 2021). Economic profitability, positive social change, and respect for cultural heritage increase the value of the tourism environment for all those involved (Rasoolimanesh et al., 2020). There is a critical need, therefore, for policies and regulations that ensure safety hygiene and service standards, while also encouraging growth and further improvement (Kurniati & Suryanto, 2023). Expansion in the homestay sector can be considered as a trend toward increasing the relevance of “healing tourism,” and many factors have suggested that the homestay sector is ready to meet the needs of future travelers—possibly facilitating profound change in the travel industry more broadly.

The homestay business in Malaysia falls under the purview of the Ministry of Tourism, Arts, and Culture (MOTAC). Despite challenges regarding the transition into the modern digital economy, Malaysia’s homestay business is an important sector within the nation’s tourism industry. The homestay sector has expanded to include 146 establishments in 2008, and 217 in 2023 (Table 1).

Table 1. Homestays in Malaysia

Number	Homestay	2008		2023	
		No. of Homestays	No. of Homestay Operator	No. of Homestay	No. of Homestay Operator
1	Selangor	16	535	16	222
2	Johor	15	435	26	465
3	Pahang	23	336	17	331
4	Negeri Sembilan	8	234	8	130
5	Sabah	19	228	34	441
6	Pulau Pinang	9	202	10	155
7	Kedah	10	200	15	206
8	Perak	6	178	11	145
9	Sarawak	16	172	49	706
10	Kelantan	8	163	8	122
11	Terengganu	7	149	7	104
12	Melaka	4	103	9	157
13	Labuan	3	65	3	80
14	Perlis	2	34	4	42
Total		146	3,034	217	3306

Note. Source: Ministry of Tourism, Arts and Culture, Malaysia, (2024).

The industry remains inefficient, however, due to outdated business models and poor adaptation to technology (Osman & Zakaria, 2020). This is evidenced by the reduction of registered homestay operators, from 449 in 2022, to 222 in 2023—and this was in Selangor, Malaysia’s most developed state (Table 2).

**Table 2. Homestays in Selangor: Number of Homestay Operators**

Number	Homestays in Selangor	District	2022	2023
			Number of homestay operators	Number of homestay operators
1	Banghuris	Selangor	80	40
2	Sg. Hj. Dorani	Sabak Bernam	20	13
3	Air Manis	Sabak Bernam	17	24
4	Batu 23, Sg. Nibong	Sabak Bernam	25	6
5	Sg. Sireh	Sabak Bernam	40	10
6	Sepintas	Sabak Bernam	20	7
7	Papitusulem	Sabak Bernam	32	13
8	Bougainvillea	Gombak	15	10
9	Kg. Endah	Kuala Langat	32	15
10	Kg. Sg. Lang Tengah	Kuala Langat	20	12
11	Batu Laut	Kuala Langat	17	13
12	Kg. Kundang	Kuala Langat	25	10
13	Kanchong Darat	Kuala Langat	50	14
14	Sg. Tengi	Hulu Langat	30	9
15	Sg. Sembilang	Kuala Selangor	11	11
16	Felda Bukit Cherakah	Kuala Selangor	15	15
Total			449	222

Note. Sg. = Sungai; Kg. = Kampung. Source: Ministry of Tourism, Arts and Culture, Malaysia, (2024).

Due to the COVID-19 pandemic, the total income for Malaysian homestays in 2020 was 9,124,122.66 Malaysian Ringgit (MYR), down from MYR 29,661,736.78 in 2019; in 2021, it dropped to MYR 6,126,302.14. Nevertheless, the sector recovered in 2022, and gross earnings rose to MYR 28,556,503.14; and, in 2023, to MYR 40,457,321.51. Structural issues have persisted (Table 3), and the established homestay business model has contained many operational flaws due to its reliance on extensive manual processes, leading to inefficiencies in tourism market regulation and promotion (Efiong & Adegbola, 2020).

**Table 3. Homestay Malaysia: Generated Income**

Number	Homestay	Generated income from homestays (MYR)				
		2019	2020	2021	2022	2023
1	Selangor	924,459.00	252,255.00	98,618.00	1,408,517.00	1,843,242.00
2	Johor	744,678.00	539,986.00	772,031.00	2,562,257.00	4,811,683.00
3	Pahang	10,107,348.00	3,538,251.56	120,730.00	6,007,350.05	11,354,933.20
4	Negeri Sembilan	638,156.00	180,981.00	364,477.89	1,490,691.55	1,288,969.50
5	Sabah	7,950,954.46	1,940,289.68	2,140,965.25	8,113,591.87	9,692,832.72
6	Pulau Pinang	455,113.00	89,340.00	206,177.00	1,001,261.00	1,387,849.00
7	Kedah	555,843.00	317,165.60	259,935.00	1,168,050.03	1,238,517.43
8	Perak	683,386.30	173,389.00	148,969.00	648,290.00	684,081.00
9	Sarawak	4,547,507.91	1,263,052.06	820,246.50	1,876,495.10	3,286,653.62
10	Kelantan	60,825.00	47,364.00	218,809.50	190,173.50	222,945.00

continued on following page



Table 3. Continued

Number	Homestay	Generated income from homestays (MYR)				
		2019	2020	2021	2022	2023
11	Terengganu	1,078,952.50	400,420.00	72,900.00	428,140.00	2,775,238.00
12	Melaka	1,303,604.52	209,190.00	575,891.00	1,897,314.00	1,352,141.04
13	Labuan	427,710.00	127,430.00	307,107.00	1,674,361.75	319,799.00
14	Perlis	183,199.09	45,008.76	19,445.00	90,010.29	198,437.00
Total		29,661,736.78	9,124,122.66	6,126,302.14	28,556,503.14	40,457,321.51

Note. MYR = Malaysian Ringgit. Source: Ministry of Tourism, Arts, and Culture (2024).

Although homestays have become a substantive part of the Malaysian tourism industry, there are multiple challenges to be addressed. First, many homestay operators still use obsolete manual systems, limiting efficiency and market exposure. Recent literature has not addressed how these homestays might be modernized for the digital economy and made relevant to present-day collaborative platforms (Zhu et al., 2021). Additionally, previous research has not examined challenges faced by small and rural businesses, whose inability to adopt to smart tourism technologies has put them at a disadvantage (Osman et al., 2020).

Despite increased tourism in Malaysia's post-pandemic recovery, the lag between policy specifications and grassroots practice remains an urgent issue. A notable lack of studies, for example, have assessed how regulatory frameworks have served homestay operators since COVID-19 (Pan et al., 2022). Furthermore, digital transformation is necessary; however, no models have yet established a comprehensive smart homestay framework built on public-private partnerships, quality assurance, and technology adoption (Cheshmehzangi, 2025). Finally, extant studies have not addressed the influence of digitization on the socio-cultural and environmental sustainability of homestays, especially regarding the balance of preserving cultural heritage while increasing financial competitiveness (Rasoolimanesh et al., 2020). It is necessary to fill these research gaps to guarantee the long-term success, flexibility, and sustainability of the homestay industry in Malaysia, as well as that of other tourist destinations.

This study investigated how MOTAC's homestay operators adapted to the collaborative digital economy, assessed benefits and challenges, and proposed a new model for MOTAC homestay management. The study aimed to improve operations, enhance tourist experience, increase homestay sustainability, and obtain governmental support. In addition, the research aimed to assist policymakers and industry professionals regarding enhancing the feasibility and sustainability of homestay businesses through strategic partnerships.

## LITERATURE REVIEW

### The Rise of the Homestay Sector

Malaysian tourism has evolved due to homestays, an industry that emerged from travelers' desire for unique, cultural experiences. Homestays have provided cultural exchange and interaction through hospitality, supplementing the experiential tourism trend (Li et al., 2020). By utilizing collaborative economic practices and sustainability, Airbnb has generated both economic impacts and positive changes (Vila-Lopez & Küster-Boluda, 2022). Integrating homestays into the Malaysian economy has been challenging, especially regarding expanded regulation and issues of quality assurance (Dredge, 2017). The relationship between public and private sectors, however, has improved resource sharing, improved service quality, and increased the sector's competitiveness; cooperation between stakeholders

has enhanced traveler experience and boosted the creation of bespoke services—ultimately increasing tourist satisfaction and brand loyalty (Attanasio et al., 2021; Baporikar, 2020).

## Homestay Management and Stakeholder Collaboration

Homestays are a form of community-based tourism, allowing tourists to stay with a local household and giving them a unique cultural experience. Homestays create both a quality experience for tourists, a sustainable income for the homestay operators and an economic boost for local communities (Suardana et al., 2024). Another important factor in homestay management has been community participation; homestays have allowed tourists to become a part of the community, hence encouraging tourist involvement in resource management and the conservation of tradition and culture. Any difficulties have been able to be solved, and opportunities harnessed, through the collaboration of stakeholders with various community-based partnerships (Dong, 2024).

Marketing and promotion strategies have included online tools, social tools, and online booking systems (Alkhatib & Bayouq, 2021). Some relevant issues have included quality management and service standards, where conformity procedures, quality control, and evaluation methods have played a significant role in enhancing service quality and guest satisfaction (Osman & Zakaria, 2020). Homestay operators have benefitted from having their knowledge, skills and resources regularly updated so that homestays can continue their steady growth and success (Osman & Zakaria, 2020).

## Stakeholders' Engagement

Stakeholder involvement has been a significant contributor to the successful management of homestays. These stakeholders have included government bodies, tourism operators, members of local communities, non-governmental organizations, academic and research institutions, the private sector, media and marketing agencies, and international organizations. Smart technologies have enabled greater participation by these diverse stakeholders in tourism planning, decision-making, and knowledge sharing—helping to preserve Malaysia's cultural heritage (Buhalis et al., 2023; Lonescu & Sârbu, 2024). For example, Baran and Karaca (2024) provided a website through which people could register locally on the homestay platform. In addition, this site introduced tourists to the region's culture and experiences, using augmented reality and multimedia content. This approach created engaging experiences that have helped visitors better understand and appreciate local traditions and activities.

Diaz et al. (2024) proposed an improved system for garnering tourist feedback by employing natural language processing and sentiment analysis, helping both homestay operators and community members to address problems in a timely manner and make any necessary changes. Virtual reality platforms enabled policy makers and designers to explore and visualize potential homestay developments, contributing to realistic and generative planning discussions (Prakash et al., 2024). Pereira et al. (2022) created a smart community involvement platform linking homestay operators and managers with their local communities. This framework engendered collaboration, resource sharing, and promoted a unified and welcoming atmosphere for tourists through homestay experiences. encouraged a unified, attractive atmosphere for tourists using homestays. Bulchand-Gidumal et al. (2023) studied the incorporation of artificial intelligence into homestay management, where AI-powered assistants offered live interaction with guests and provided homestay operators with both advice and direct communication with guests and the wider community, all of which facilitated cooperation with AI, fostering dynamic interactions and integrating AI assistants into external activities.

Despite the many benefits of smart technology, however, there have been problems needing to be addressed—low or inconsistent levels of digital literacy across different sectors of society, insufficient infrastructure, and cyber security concerns, for example. All these issues need to be resolved through by collaborating, building capacity initiatives, and generating state-of-the-art security systems (Astanakulov et al., 2025).

## Theoretical Foundations

This study drew upon two key theories: unified theory of acceptance and use of technology 3 (UTAUT3), and stakeholder theory (ST). These theories were used to identify constructive involvement of stakeholders to improve the profitability and sustainability of the homestay sector.

### UTAUT3

From a qualitative perspective, UTAUT3 has functioned as an interpretive structure revealing the cultural values at play when users interact with technology. UTAUT3 has proved a useful provider of both research interview structures and thematic coding structures, because it has aided understanding of operator interactions within the collaborative digital economy domain. Venkatesh et al. (2012) transformed UTAUT3 through developing the original model by blending foundations of the theory of reasoned action with the theory of planned behavior.

This study used qualitative methods, including narrative inquiry and thematic analysis, to examine how identified constructs appeared in the daily operations of MOTAC homestay operators, expanding existing knowledge of technology adoption beyond traditional factors such as habit and hedonic motivation (Thanigan et al., 2021).

### Stakeholder Theory

Stakeholder theory enabled this study's examination of how stakeholders in the tourism and hospitality sector interacted with each other (Freeman, 1984). The theory provided valuable insights into how stakeholders collaborated to maintain homestay standards and improve business competitiveness (Attanasio et al., 2021). According to Wayan et al. (2024), stakeholder theory provided tourism management with systems with which to recognize stakeholder response and activity in their role regarding planning and development strategies. Stakeholder theory made it clear that all stakeholders deserved both fair contributions and equal access to adequate benefits, and that they should receive these concurrently. The theory enhanced strategic models by integrating diverse stakeholder perspectives, enabling value creation through collaborative interactions.

## METHODOLOGY

The methodology of this study involved qualitative research. According to Gioia (2021), qualitative research's advantage is its flexibility, allowing researchers to adapt as they go and reflect deeply on what they observe. For this study, it enabled a rich, detailed understanding of the operational dynamics affecting the homestay industry, often through in-depth case studies and close examination of real-life situations (Gioia, 2021).

The open-ended, semi-structured, face-to-face interviews were divided into two phases. In the first interview phase, to ensure that the right participants were selected, the researchers requested the MOTAC homestay coordinator to recommend the most active MOTAC homestay operators, as recognized by MOTAC, to be interviewed (Table 4).

Table 4. List of Active Ministry of Tourism, Arts, and Culture Homestay Selangor Operators

Number	Homestays in Selangor	District	No. of Active MOTAC Homestay Operator
1	Banghurus	Sepang	30
2	Sg. Hj. Dorani	Sabak Bernam	12
3	Air Manis	Sabak Bernam	11
4	Batu 23, Sg. Nibong	Sabak Bernam	6
5	Sg. Sireh	Sabak Bernam	4
6	Sepintas	Sabak Bernam	7
7	Papitusulem	Sabak Bernam	11
8	Bougainvilla	Gombak	9
9	Kg. Endah	Kuala Langat	6
10	Kg. Sg. Lang Tengah	Kuala Langat	7
11	Batu Laut	Kuala Langat	1
12	Kg. Kundang	Kuala Langat	6
13	Kanchong Darat	Kuala Langat	7
14	Sg. Tenggi	Hulu Langat	-
15	Sg. Sembilang	Kuala Selangor	5
16	Felda Bukit Cherakah	Kuala Selangor	9
Total			131

Note. Sg. = Sungai; Kg. = Kampung. Source: Ministry of Tourism, Arts and Culture, Malaysia, (2024)

For the second phase, the chairman of the Malaysian Private Homestay Association (MPHA) was interviewed, as were 13 government officers. These officers were directly involved in homestay planning and execution, at both federal and state levels. (For clarification, “federal” refers to Malaysia’s national government, responsible for policies and laws affecting the country as a whole; “state” is regional governance, with the implementation of laws and policies specific to each state.) The names of the government officers were obtained from a government website (Table 5). Regarding MPHA, a government officer provided contact information.

Table 5. List of Government Officers

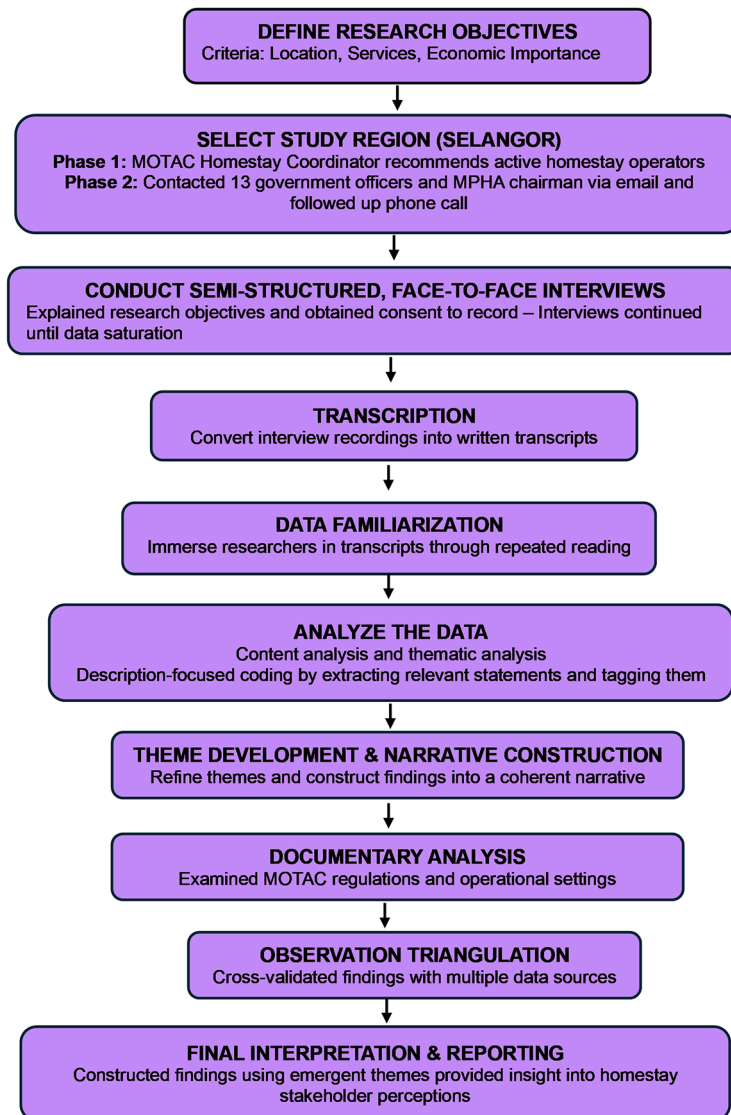
Number	Government officer
1	Ministry of Tourism, Arts and Culture (MOTAC, Putrajaya)
2	Ministry of Tourism, Arts and Culture (MOTAC, Selangor)
3	Malaysia Tourism Promotion Board (MTPB)
4	Tourism Selangor Sdn Bhd (TSSB)
5	Plan Malaysia, Ministry of Local Government (R&D)
6	Plan Malaysia, Ministry of Local Government (Legal Division)
7	Ministry of Investment, Trade and Industry (MITI) (Department of Standards Malaysia)
8	Malaysia Productivity Corporation (MPC)
9	Malaysia Digital Economy Corporation (MDEC)
10	Institute for Rural Advancement, Ministry of Rural Regional Development (INFRA)
11	Kuala Langat Municipal Council (KLMC)
12	Sepang Municipal Council (SMC)
13	Sabak Bernam District Council (SBDC)

Prior to being interviewed, participants were asked for permission to record the sessions, and the research objectives were explained. Selangor was selected as the focus of this study due to its strategic location, diverse and well-established tourism services, unique regional features, and its vital role in

1 contributing to Malaysia's overall economic growth. These factors made it an ideal setting for exploring the dynamics of the homestay industry and gathering meaningful insights from stakeholders. Through purposive sampling, only the active participants who were involved with MOTAC-registered homestays were directly accessed; this strategy ensured the collection of contextual data essential for in-depth analysis.

24 The aim of qualitative research is not the production of statistically generalizable results, rather, sample size adequacy is typically determined by the point of saturation, when additional data no longer yield new insights or themes (Bouncken et al., 2025). Accordingly, once data had been collected, a written transcription was developed to facilitate analysis—this transcript was closely examined; content and thematic analysis were the methods used. Description-focused coding was undertaken by extracting relevant statements and tagging them, followed by coding, whereby the transcripts were read several times to glean recurrent themes. The emerging, explicating, and labeling process involved revisiting identified themes, as well as synthesizing the findings into a coherent narrative. Documentary analysis helped give context to MOTAC's homestays by examining their regulatory and operating settings. Lastly, observation triangulation served as an enhancement mechanism to validate research results by combining information obtained from multiple data sources. By comparing and cross-checking information from multiple sources, the findings were made robust and trustworthy (Figure 1).

Figure 1. Qualitative Methodology Process Flow Diagram



## RESULTS AND DISCUSSION

### Findings: In-Depth Interviews From MOTAC Homestay Operators

#### *Theme 1: Homestay Management and Smart Technology*

AI has enhanced service operations and performance of homestays, alongside increasing customer satisfaction levels (Bulchand-Gidumal et al., 2023; Prakash et al., 2024). Besides their use in bookings, AI-based chatbots have enabled hosts to provide individualized guest interactions that combine quick transactions with personalized suggestions (Astanakulov et al., 2025; Pereira et al., 2022). AI systems have enhanced consumer satisfaction by providing immediate communication access alongside customized services, in tourism more broadly and in homestay operations more specifically (Buhalis et al., 2023; Lonescu & Sârbu, 2024).



1 Research findings indicated that homestay operators from Air Manis (Respondent 16), Kg Batu Laut (Respondent 50), Kg Sg Lang Tengah (Respondent 58), Kg Kundang (Respondent 70), Kanchong Darat (Respondent 61), Kg Endah (Respondent 68), Banghuris (Respondent 64) and Kampung Ulu Chuchoh (Respondent 67), were willing to adopt smart technology for homestay management to stay current with technological and industry developments. These responses aligned with the findings by Alkhatib and Bayouq (2021), who noted that small tourism operators achieved improved service quality and competitiveness by embracing technology. Additionally, it was consistent with Seyyedamiri and Khosravani (2020), who revealed that the need to innovate and improve both customer satisfaction and sustainability drove smart technology adoption. These similarities indicated that rural homestay providers were currently increasingly aware of the ways digital transformation was necessary to survive and thrive in a rapidly changing tourism environment. A homestay operator from Kg Kundang (Respondent 70) stated:

37 *Today's technology is getting more advanced ... we have no problem accepting and adjusting to the latest technological developments ... I am willing to learn to use smart technology to stay up-to-date ... we must follow the trends to stay relevant ... I'm also ready to learn and use the latest technology if proper training is provided by the government.*

These perspectives aligned with findings reported by Osman and Zakaria (2020), who pointed out that a positive attitude and openness to technology were major determinants regarding prosperous digital adoption in rural tourism. It was discovered that the more operators experienced technology as beneficial and were given enough resources, the more they used digital tools. On the same note, Efiong and Adegbola (2020) pointed out that small-scale tourism providers were much closer to being technology-ready and digitally literate when there was access to training and state-funded support. These findings were supplemented by a willingness to learn exhibited by respondents, and the focus on government training to empower rural citizens in the digital economy.

## Theme 2: Homestay Management and Smart Payment

Smart payment technology has been shown to enhance guest convenience by allowing secure transactions during the booking process. This has aligned with the broader trend of digital transformation within the hospitality industry, where the ability to offer multiple payment methods, including mobile wallets and online payment gateways, has played an important role in meeting the expectations of tech-savvy travelers (Thanigan et al., 2021). Lonescu and Sărbu (2024) emphasized that smart payment systems helped enhance customer trust by providing secure, cashless transactions, which have become particularly important in the post-pandemic tourism landscape. The shift toward contactless payments has reduced the physical exchange of cash, making it a preferred option for health-conscious travelers and contributing to a better guest experience in homestay settings.

1 Interview results showed that all homestay operators strongly agreed on having a system for making payments. Homestay operators from Kg Batu Laut (Respondent 50), Kg Sg Lang Tengah (Respondent 58), Kg Kundang (Respondent 70), Kanchong Darat (Respondent 61), Kg Endah (Respondent 68), Banghuris (Respondent 64), and Kampung Ulu Chuchoh (Respondent 67), were very supportive of having a system to assist with receiving payments. As mentioned by a homestay operator from Kg Kundang (Respondent 70): "Guests usually make payments in case ... however, I also agree with online payments."

Meanwhile, according to a homestay operator from Kanchong Darat (Respondent 61): "I prefer online payments for larger amounts ... I also would like to suggest that there should be a center at the homestay to handle bookings, online payments, and provide training."

These findings aligned with suggestions from Vukasović and Mihač (2021), who stressed improving rural tourism businesses through the adoption of enhanced digital payment systems to increase transparency, convenience, and monetary safety. Likewise, Van Huy et al. (2019) discovered that centralized booking and payment systems helped improve the function of management, raised customer confidence, and improved efficiency among community-based tourism providers.

### Theme 3: Homestay Management and Smart Assistants

AI-based chatbots with virtual assistants replied directly to guest inquiries instantly about check-in procedures, local recommendations and homestay amenities (Bulchand-Gidumal et al., 2023; Lonescu & Sârbu, 2024). The availability of these technologies allowed for reliable guest assistance, and through them guests enjoyed a better overall experience (Baran & Karaca, 2024; Diaz et al., 2024). All homestay operators demonstrated a readiness to adopt smart technology, because of it being a key part of contemporary society (Astanakulov et al., 2025; Buhalis et al., 2023). The registered homestay operators from Air Manis (Respondent 16), Kg Batu Laut (Respondent 50), Kg Sg Lang Tengah (Respondent 58), Kg Kundang (Respondent 70), Kanchong Darat (Respondent 61), together with Kg Endah (Respondent 68), Banghuris (Respondent 64), and Kampung Ulu Chuchoh (Respondent 67), declared: “We have no problem using technology such as smart assistance because we understand the importance of staying current with trends.”

The willingness of respondents to use smart technology, and the understanding of the importance of keeping up to date with trends, was consistent with UTAUT3, where performance expectancy and effort expectancy were factors contributing to technology adoption (Venkatesh et al., 2012). People tended to adopt technology easily when they felt that technology was helpful and convenient. In a similar fashion, Pereira et al. (2022) stressed that perception of digital trends and usefulness contributed to technology acceptance, especially in the tourism industry. This statement reflected not only the recognition of technology’s relevance but also the willingness to adopt smart technology. This supported previous findings that attitude, perceived benefits, and contextual motivation were key factors in digital adoption. A homestay operator from Kg Kundang (Respondent 70) expressed mixed feelings about Chatbot technology: “I do not oppose Chatbot technology ... but I am struggling to find younger users interested in managing homestays.”

### Theme 4: Smart Tourism Promotion

Traditionally, homestay operations have been organized manually—the customer has contacted the homestay directly. Today, social media is used to promote homestays, eliminating geographical boundaries that may have prevented direct communication between homestay hosts and guests. Social media channels such as Instagram, Facebook, and YouTube have functioned as tools for building engaging digital content that has helped potential tourists discover the uniqueness of homestays (Baran & Karaca, 2024; Buhalis et al., 2023). The visual approach in marketing has presented operators with an opportunity to display authentic local features, thereby setting themselves apart from regular accommodation. Research has demonstrated how AI algorithms have tracked user preferences and activities through social media to achieve enhanced targeted marketing, as a part of smart tourism promotion (Lonescu & Sârbu, 2024).

Despite these advancements, research has indicated that registered homestay operators have possessed limited digital skill abilities (Kurniati & Suryanto, 2023; Osman & Zakaria, 2020). The interview findings showed that most registered homestay operators demonstrated poor expertise regarding technology usage for promotional purposes, particularly regarding social media. One homestay operator from Kanchong Darat (Respondent 61) stated: “I do not know how to use social media, but I am willing to learn if training is provided.” Meanwhile, a homestay operator from Kg Endah (Respondent 68) noted: “I have Facebook, but my children help me with all the posting ... I only have basic skills in using smartphone apps like WhatsApp.” A homestay operator from Banghuris (Respondent 64) mentioned: “I have Facebook and basic skills in using technology, and I believe that technology can help improve homestay promotion.” A homestay operator from Kg Kundang (Respondent 70) stated: “I have a social media account and can use it ... the use of technology is important now to follow the current trend.” Reflecting on the findings of Pereira et al. (2022), the homestay operator from Kampung Ulu Chuchoh (Respondent 67) explained: “I have my website for promoting my homestay and my children operate the site.”

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### Theme 5: Digital Collaborative Economy and Smart Partnership

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In tourism and hospitality, smart partnerships have utilized technological systems and joint ventures to enhance service quality and market competitiveness (Attanasio et al., 2021; Buhalis et al., 2023; Dong, 2024). Research data showed that many homestay operators demonstrated an openness to inter-agency collaboration if it enhanced their own operations. Homestay Sepintas partnered with homestay Air Manis, for example, enabling them to host 40 Japanese visitors. Respondent 30 at Homestay Sepintas explained their role in helping homestay Air Manis arrange Japanese visitor accommodation, noting: “Homestay Air Manis fully manages all activities including cultural experiences that include *Wau*-making and a firefly tour.”

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The successful partnership between Sepintas and Air Manis demonstrated the positive effects of two organizations working together to provide additional services to accommodate large tourist groups (Dong, 2024). The significance of strategic homestay partnerships for enhancing service delivery and industry competitiveness supported previous studies (Attanasio et al., 2021). Furthermore, Respondents 16, 50, 58, 70, 61, and 68 from Air Manis, Kg Batu Laut and Kg Sg Lang Tengah, Kg Kundang, Kanchong Darat, and Kg Endah, expressed interest in collaborating with either unlicensed homestays or additional regional groups that might enhance their own homestay experience (Kurniati & Suryanto, 2023; Pereira et al., 2022).

### Theme 6: Wider Homestay Problems

The interviews revealed that registered operators expressed dissatisfaction with the lack of enforcement when it came to unregistered businesses—a well-documented issue (Kurniati & Suryanto, 2023). This tension between registered and unregistered operators represented a significant challenge in the homestay sector (Litheko, 2022). Respondents from homestay Bougainvillea and homestay Sungai Hj Dorani agreed that the absence of regulation had contributed to an unfair, competitive landscape, where unregistered operators were able to offer features that were financially inaccessible to registered homestays.

This issue of unregulated competition aligned with broader challenges identified in homestay management and regulation (Malaysian Standard, 2022; Pereira et al., 2022). The lack of comprehensive regulatory frameworks has created market inequities impacting registered operators’ ability to compete effectively (Dong, 2024). As mentioned by the homestay operator from homestay Sungai Hj Dorani (Respondent 24): “The policy is still loose where MOTAC has not come out with any act for an unregistered homestay, so then people think that homestay is about accommodation business.”

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Similarly, homestay operators from Kg Batu Laut (Respondent 50), Kg Sg Lang Tengah (Respondent 58), Kanchong Darat (Respondent 61), and Banghuris (Respondent 64), confirmed that competition from unregistered homestays had negatively impacted their businesses. In contrast, Sg. Semilang homestay saw competition from unregistered operators as healthy, relying on its unique “X-factor” to attract visitors, despite the presence of unregulated competitors. As noted by the homestay operator from homestay Sg. Semilang (Respondent 18): “We believe in healthy competition ... competition is good ... it doesn’t matter how many illegal homestays exist because we believe in each other’s sustenance ... if we can provide better facilities and there must be the X-factor, people will come again.”

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This alternative perspective on competition aligned with research on successful homestay business models (Buhalis et al., 2023), and the importance of developing unique value propositions in the tourism sector (Alghamdi & Bogari, 2020). Quality service, along with distinctive features, has operated as a competitive advantage in line with recommendations for sustainable tourism development (Rasoolimanesh et al., 2020).

### Theme 7: The “Inside” Problems of Homestay

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According to Foo et al. (2020), the COVID-19 outbreak negatively impacted most homestay operations, either by reducing customer numbers or elevating operational expenses, which impeded

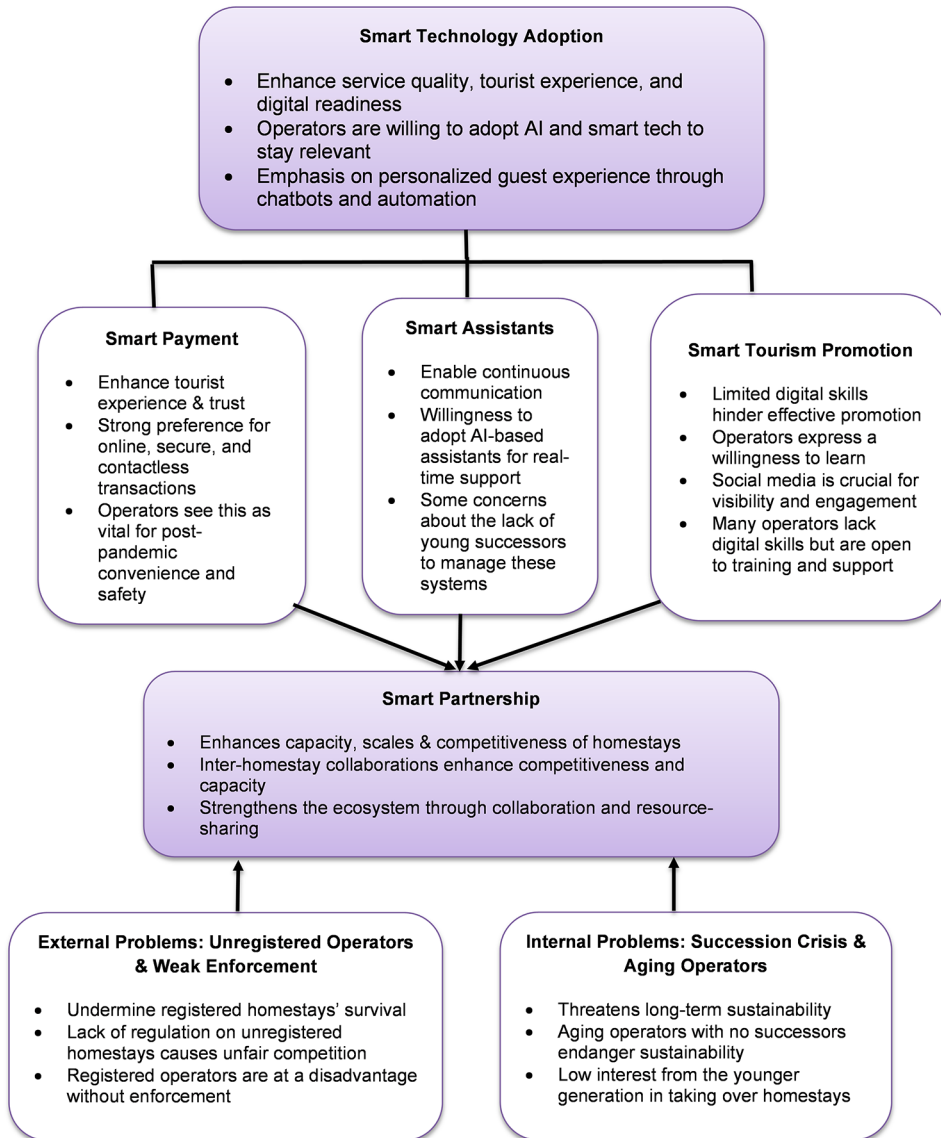
equipment upkeep and business operation costs. The Malaysian tourism industry experienced a notable impact that required homestay operators to implement new operational adjustments (Kurniati & Suryanto, 2023). The decline of homestay operators due to inconsistent income from community-based homestays has prevented the new generation from taking over, thus putting the sustainability of homestay ventures in Malaysia at risk (Dong, 2024). The challenge of operator succession has paralleled broader tourism efforts aimed at developing sustainable communities (Rasoolimanesh et al., 2020).

According to Litheko (2022), the absence of successors in most homestays has represented a critical threat to the long-term viability of the homestay program. The homestays successful in passing operations to successors, such as the Banghuris homestay, were rare (Pereira et al., 2022). A homestay operator from Kampung Ulu Chuchoh indicated (Respondent 67): “Many operators age or die while their absence of successors to preserve homestay legacy represents a major concern.” This has created a major sustainability problem (Suardana et al., 2024). To address this, youth engagement strategies for homestay operations have been deemed essential (Pereira et al., 2022).

Figure 2 summarizes MOTAC homestay digital transformation and challenges, as gleaned from in-depth interviews with MOTAC homestay operators.

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Figure 2. Ministry of Tourism, Arts, and Culture Homestay Digital Transformation and Challenges: Key Findings



## Findings: In-depth interviews from Government Officers and the Malaysian Private Homestay Association

### Theme 1: Industry Challenges and Regulatory Framework

During an in-depth interview with Respondent 8 from the Malaysia Productivity Corporation, several regulatory issues pertinent to the homestay industry in Malaysia were identified, reflecting challenges documented in recent research (Kurniati & Suryanto, 2023; Litheko, 2022). As stated by (Respondent 8):

*There are debates on the need for documentation and approval of compliance or requirements for compliance ... certain compliance features that cannot be implemented fully due to the regulations ... there is no clear policy, mechanism, or standard to regulate homestay businesses in Malaysia ... at the moment ... the current structure of governance works under multiple authorities*



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including local government (PBT), Ministry of Tourism, Arts and Culture (MOTAC), and Ministry of Housing Local Governments (KPKT) ... due to the existence of multiple authorities that have jurisdiction over homestay businesses, there's usually a conflict of authority.

The challenges of multi-authority governance and regulatory compliance aligned with findings from several studies examining homestay management frameworks (Dong, 2024; Kurniati & Suryanto, 2023; Litheko, 2022; Pereira et al., 2022). The conflict between different authorities' jurisdictions represented a significant challenge in implementing effective regulatory frameworks. Moreover, Respondent 14 from MPHA highlighted that:

*There are still many private homestay operators remain unregistered with MOTAC due to its strict guidelines ... although these operators have legally registered their companies with the Companies Commission of Malaysia (CCM), they are still considered illegal homestays without MOTAC registration.*

The scale of the private homestay sector in Malaysia has been estimated to contain approximately 411,100 registered operators on the Homestay Malaysia Facebook page, administered by MPHA. This issue of unregistered operators, despite CCM registration, has reflected broader challenges in homestay regulation and standardization (Kurniati & Suryanto, 2023). The strict MOTAC guidelines and their impact on registration rates have been noted as a significant factor in the industry's development (Buhalis et al., 2023). The scale of the private homestay sector, with approximately 411,100 registered operators on the Homestay Malaysia Facebook page, demonstrated the significant growth of this sector. Furthermore, Respondent 14 from MPHA noted that:

*There are 25,691 applications are waiting for approval before being enlisted with the list of active homestay operators, as the administration has to ascertain the originality of these companies to avoid scams ... it also demonstrates great potential for further expansion of this.*

The large number of pending applications and the need for verification processes has reflected the growing importance of proper documentation and verification in the homestay sector, particularly in terms of preventing fraud and ensuring quality standards (Baran & Karaca, 2024; Pereira et al., 2022). This situation has indicated the sector's potential for growth, while highlighting the need for streamlined registration processes (Malaysian Standard, 2022).

## Theme 2: Infrastructure, Digital Assets, and Records Management

Respondent 13 from MITI mentioned that: "Technological support, information systems, and data management appear to be pertinent sectors that the homestay industry needs to improve in soon." This observation aligned with current research highlighting the critical role of technology in modern tourism management (Buhalis et al., 2023; Diaz et al., 2024). It was supported by Respondent 5 from MDEC, who said:

*There are huge digital issues in the given sector ... on appropriate digital platforms, effective data gathering systems, and secure online booking systems ... that the firms need to come up with sound digital solutions in a bid to support secure transactions, property tours, and reliable booking methods ... the absence of digital standards has led to cases fraud and failure to come up with proper security measures in the industry.*

These concerns about digital infrastructure and security have been well-documented in recent literature. Baran & Karaca (2024) emphasized the importance of data privacy and safety in hospitality technology usage, while Kurniati and Suryanto (2023) addressed cybersecurity awareness among homestay operators. The need for secure digital platforms and standardized systems has been further supported by research showing how technology acceptance impacts tourism services (Pereira et al., 2022). The challenges regarding secure transactions and reliable booking methods aligned with findings from Bulchand-Gidumal et al. (2023), who studied the impacts of digital communication on guest-host relationships.

Furthermore, Kurniati and Suryanto (2023) documented the specific challenges of digital transformation for rural homestay businesses, highlighting the need for comprehensive digital



9 solutions. The issues of fraud and security measures reflected broader concerns in the tourism industry regarding trust and safety on digital platforms, particularly in the context of emerging digital economies and online booking systems (Diaz et al., 2024; Pereira et al., 2022).

### Theme 3: Strategizing Against Unregistered Homestays

Homestay operators registered with MOTAC have faced major challenges in competing with unregistered homestays, especially private short-term rental accommodations (STRA) that have disguised themselves as legal homestays but are without MOTAC registration. This has not only eroded the confidence of consumers in the registered operators but has had the effect of confusing consumers into thinking that all homestay service providers are registered and conform to required standards (Litheko, 2022). This competitive imbalance has worsened, as legal homestay businesses, that aim to provide safe and quality accommodations, have faced income loss or even the risk of closure; it has been especially difficult for those operating through weaker market channels (Pereira et al., 2022). This lack of regulation in the STRA sector has had significant implications for hospitality quality and infrastructure (Malaysian Standard, 2022). Respondent 1 from MOTAC explained: “The lack of regulation not only affects the quality of the hospitality experience but also puts extra pressure on supporting infrastructures.”

These challenges have aligned with broader issues identified in the homestay sector (Baran & Karaca, 2024; Pereira et al., 2022), particularly regarding the distinction between registered and unregistered operations. Respondent 2 from MTPB noted:

*The public embrace of STRA concept has prompted all the unit owners within residential buildings opt for short time lets than long-term tenancies hereby changing housing and community accessibility and stability ... overall, these factors underscore the need to address the emerging complications associated with unregulated STRAs practices.*

Respondent 2, regarding the homestay banner or homestay promotion on social networking sites, expressed that:

*The tourist is put in a confusing situation having to think that such homestay banners or promotions belong to MOTAC but in reality, they do not ... this confusion poses a problem to the practical legitimate homestay business that adhere to set standards and legal requirements.*

Aware of this problem, the Malaysian government has addressed the issue with a set of general planning principles for STRA. This has represented a significant step toward addressing regulatory challenges (Malaysian Standard, 2022). The Selangor State Tourism Purification Program (P3S) has aligned with recommended approaches for homestay management and regulation (Kurniati & Suryanto, 2023). Respondent 6 from KLMC highlighted:

*The council's current efforts to develop comprehensive guidelines for the unregistered homestay program ... the Selangor State Tourism Purification Program (P3S) aims to assist homeowners and accommodation providers by clarifying the application process for licenses and outlining the operational requirements needed to ensure that tourism accommodations are managed in an orderly and regulated manner.*

Respondent 6 noted: “Many homestays operate without the necessary approvals primarily because owners lack clarity regarding the operational procedures, compounded by the absence of formal guidelines, policies, and incentives to encourage compliance.”

The issue of unregistered operations has stemmed from various factors, including the lack of clear operational guidelines and formal policies (Buhalis et al., 2023). In detailing the steps necessary for registration in the P3S, Respondent 6 outlined a structured process:

*Firstly, operators are required to register for the P3S program and sign the program compliance form ... secondly, they must apply for planning permission, which involves submitting a landscape plan and tree inventory, in addition to appointing a registered town planner and landscape architect ... following this, operators need to apply for a temporary business license, which is granted upon submission of the planning permission application to the local central unit ... the*

*subsequent steps include resolving any land use issues through permits, applying for building plan approvals or temporary building permits, and finally, applying for a full business license as applicable.*

This structured registration process aligned with good practices for homestay program development and reflected the importance of proper planning and documentation (Pereira et al., 2022). The framework for land use transition demonstrated alignment with sustainable tourism development principles and consideration for preserving local agricultural landscapes (Rasoolimanesh et al., 2020). Turning to Respondent 7 from the Sabak Bernam district council, the discussion revealed that the council's P3S initiatives included a detailed framework for applicants seeking to convert land use from agriculture to residential for homestay development. Respondent 7 emphasized:

*Applicants must submit a limited-period planning permission application, facilitated by a qualified town planning consultant ... such developments are permissible as long as they do not exceed 20% of the total area of the agricultural land ... this provision allows for the issuance of a special permit without necessitating a formal change in land category, following Section 115(4) (a) of the National Land Code (KTN) ... the intention is to preserve the agricultural landscape, specifically rice cultivation areas, as a key attraction while regulating development.*

However, should a development exceed the 20% threshold, Respondent 7 indicated:

*Operators would be granted a five-year period to reclassify the land use category to building status ... during this time, they may be eligible for temporary planning permits stipulated under Section 22(5)(a) of Act 172, as well as temporary permits as per the Selangor uniform building by-laws of 1986 ... once the planning permission (Form C1) is approved, applicants are required to obtain the necessary building plan approvals and temporary building permits from the building control department, followed by business license approval from the licensing department.*

This multi-stakeholder approach to planning permission review reflected recommended practices for stakeholder collaboration in tourism development (Dong, 2024). The involvement of multiple technical departments ensured comprehensive oversight, which was crucial for sustainable homestay development (Pereira et al., 2022). Respondent 7 also highlighted:

*The benefits that licensed homestay operators can leverage, which include promotional support from Tourism Selangor SDN BHD, facilitated by the Selangor State Ministry of Tourism, Arts and Culture (MOTAC) ... this promotional backing can significantly enhance visibility and attract tourists to their accommodations.*

Finally, Respondent 7 noted:

*The collaborative nature of the planning permission review process, involving multiple technical departments, including the Sabak Bernam district and land office (PTDSB), Tenaga Nasional Berhad (TNB), state water authority (PBAN), fire department, development planning department, building control department, engineering department, landscape department, and the health and environment services department ... this inter-departmental cooperation is essential to ensure a comprehensive review of applications and adherence to regulatory standards.*

The promotional support offered through Tourism Selangor aligned with strategies for enhancing homestay visibility and marketing effectiveness (Baran & Karaca, 2024). The inter-departmental cooperation in the review process represented a model of integrated tourism planning and development that ensured comprehensive consideration of all relevant factors in homestay regulation (Buhalis et al., 2023).

#### **Theme 4: Malaysian STRA Digital Management Platform**

The Malaysian STRA industry has experienced rapid growth, creating an urgent need for a comprehensive digital management platform to regulate and streamline operations (Kurniati & Suryanto, 2023). This need has stemmed from challenges in monitoring unlicensed accommodations, ensuring safety standards, and maintaining fair competition in the market (Baran & Karaca, 2024; Pereira et al., 2022). According to Respondent 4 from PLAN Malaysia:

“Currently, PLAN Malaysia works closely with Malaysian Digital Economy Corporation (MDEC) to design the Malaysian STRA digital management platform ... this platform is designed to be a comprehensive monitoring system with various integrated modules to ensure its effectiveness.”

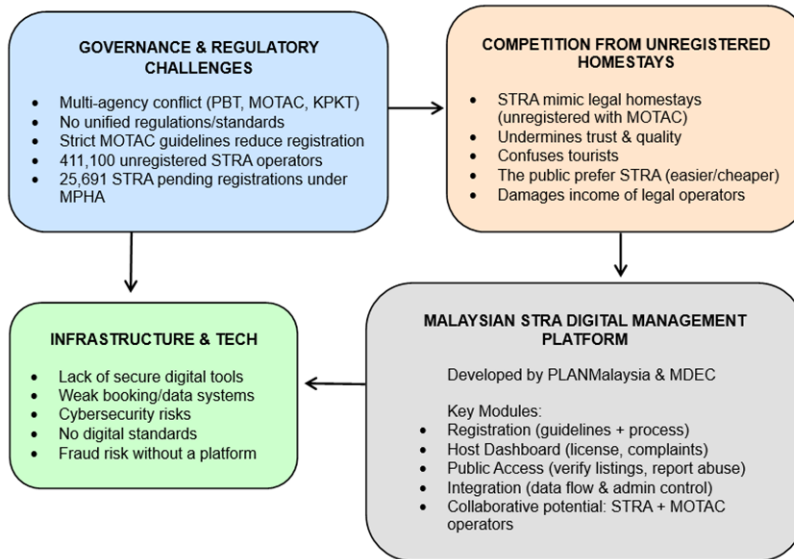
The platform’s architecture has aligned with best practices in smart tourism platform design and incorporated essential elements for community engagement (Buhalis et al., 2023). The implementation considered crucial cybersecurity aspects for homestay operators (Kurniati & Suryanto, 2023). Respondent 4 and Respondent 5 revealed:

*The platform consists of several key modules, each serving specific functions ... the STRA registration module forms the foundation of the system, incorporating two essential sub-modules: registration guidelines and the actual registration process ... this ensures that all STRA operators understand and follow proper registration procedures ... the host and operator dashboard module serves as a central control panel, featuring sub-modules for rental period monitoring, licensing management, and a complaints and notification system, enabling operators to effectively manage their properties and respond to issues promptly ... for public engagement, the public module provides transparency and accessibility through two main sub-modules: a directory of registered STRA properties and a public complaints system ... this allows the general public to verify legitimate STRA properties and report any concerns ... the integration module serves to connect various aspects of the platform, ensuring seamless data flow and communication between different components ... all these modules are overseen by system/platform administrators who manage and maintain the platform's functionality, ensuring smooth operations and proper data management.*

This has represented an opportunity for MOTAC homestay operators to establish business partnerships with STRA operators (Attanasio et al., 2021). Working with STRA operators has enhanced visibility and operational efficiency, while ensuring optimal guest experiences (Dong, 2024). When faced with strong business competition, solo homestays have struggled to compete with larger players and faced higher overhead costs, due to a lack of shared services (Baporikar, 2020). The small-scale MOTAC homestay operators have stood to benefit from collaborative approaches with STRA operators, pooling resources and contacts to increase their efficiency and profitability in a competitive market (Buhalis et al., 2023).

Figure 3 below summarizes STRA and homestay governance in Malaysia, as taken from in-depth interviews with government officers and the Malaysian Private Homestay Association.

Figure 3. Short-Term Rental Accommodations and Homestay Governance in Malaysia: Key Findings



## PROPOSED HOMESTAY MANAGEMENT MODEL TOWARD A COLLABORATIVE DIGITAL ECONOMY

The qualitative findings, drawn from interviews with homestay operators, government officials, and the chairman of the MPHA, closely aligned with Buhalis et al. (2023)'s research on developing smart tourism destinations. Buhalis et al. (2023) conceded that the adoption of cutting-edge technologies, collaborative stakeholder interaction and data-driven systems played a significant role in turning tourism environments into smart, networked ecosystems. The proposed model resembled this, since it urged the use of digital mediums in promoting communication, operation efficiency, and service innovation within homestay communities. This consistency indicated how this model illustrated the practical implementation of the theoretical aspects of smart tourism, by veering into actualized applications that improved best practices and expanded market coverage.

The model helped sustain concepts presented by Choi (2021), who emphasized the significance of community-based digital platforms in transforming tourism into a sustainable, inclusive economic system. According to Choi (2021), when local stakeholders were empowered with digital marketing, integrated communication approaches, and technological literacy, tourism competitiveness increased considerably in both rural areas and local, community-based tourism environments.

These elements were incorporated into the proposed model, which emphasized stakeholder collaboration, marketing communication, and technology-driven approaches, reflecting Choi's ideas on digital transformation that prioritize both innovation and inclusiveness with a community-based orientation (Choi, 2021). These two perspectives (Buhalis et al. (2023); Choi, 2021) influenced this model's approach to tourism in a modern context, and how this model could be effectively implemented so as to be emulated by other, similar, homestay-based tourism destinations.

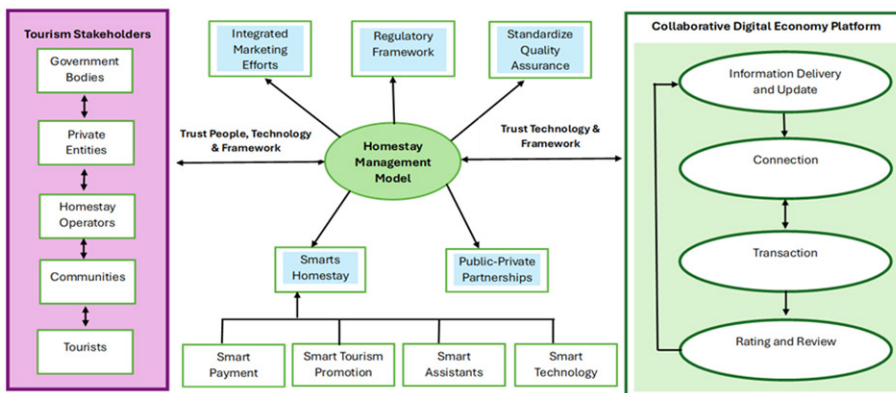
Central to this model was the homestay management model built on trust in people, technology, and frameworks (Attanasio et al., 2021). Also included were integrated marketing efforts that involved coordinating promotional activities to attract tourists through related communication media, such as Facebook and various websites (Seyyedamiri & Khosravani, 2020). The rationale was achieved through compliance with the regulatory framework that served as a legal and operational benchmark (Malaysian Standard, 2022), and standard quality assurance—both of which helped maintain the

quality of services provided in homestays. In Malaysia, standard quality assurance has worked with the Malaysian standard sharing economy, which has stipulated values of integrity, transparency, accountability, accessibility, respect for others, and competence of the participants (Malaysian Standard, 2022).

Collaboration between homestay operators, government agencies, and private sector players has been—and remains—crucial for sustainable growth (Suardana et al., 2024). A public–private partnership model has facilitated this collaboration (Litheko, 2022), with the government providing financial incentives or subsidies for technology adoption and the private sector offering the necessary technological expertise and infrastructure. Additionally, it has been proposed that a digital platform be developed to centralize marketing efforts (Kurniati & Suryanto, 2023), enabling homestay operators to reach a broader audience while sharing resources such as training materials and customer reviews. Moreover, the smart homestay concept has introduced technological advancements (Baran & Karaca, 2024), through four subcomponents: smart payment, smart tourism promotion, smart assistants, and smart technology categories, thereby aiming to increase organizational effectiveness and improve guest experience (Nor et al., 2025; Pereira et al., 2022).

The fundamental component of the developed model has been identified as the collaborative digital economy platform (Vila-Lopez & Küster-Boluda, 2022), which served to promote effective interaction between the involved stakeholders, enhance the timely delivery of information, and provide for electronic transactions (Alkhatib & Bayouq, 2021). It had a rating and review system to update the current service delivery in the facility (Thanigan et al., 2021). In conclusion, the model was shown to promote creativity and partnership in building a digital economy that offered the potential to transform both the experience of local homestay providers and the broader tourism sector (Lonescu & Sârbu, 2024). This is presented in Figure 4.

Figure 4. Proposed Homestay Management Model Toward A Collaborative Digital Economy



## THEORETICAL IMPLICATIONS

### UTAUT3 in Tourism: Homestays

It remains possible to improve the UTAUT3, especially regarding homestays. First, when choosing a homestay, how consumers define and valuing of issues of cultural “fit” and “authenticity” have been shown to be paramount—tourists have often sought unique and culturally rich travel experiences; furthermore, it has been demonstrated that it is important to develop technology that supports cultural nuances (Li et al., 2020). Interpersonal trust has been defined as an important factor—the guests and hosts need to trust each other; technology such as communication media and online reviews can



enhance or erode this trust (Van Huy et al., 2019). Third, guest–host interaction, through technologies such as internet messaging, has been shown to have a strong impact on the guest experience and consequently on issues related to technology adoption (Osman & Zakaria, 2020).

Peer recommendations and reviews have had the most influence on travelers, and authentic customer feedback has improved credibility in homestay and booking technologies (Vukasović & Mihač, 2021). In addition, other technologies, such as local experience augmentation through local activity apps, has increased in demand, as this aspect has assisted guests in choosing nearby attractions and therefore what type of accommodation they might enjoy (Diaz et al., 2024). Support and communication channels have been crucial, because the guest-impacting features of instant messaging and media sharing have increased levels of guest satisfaction and engagement (Alghamdi & Bogari, 2020).

A responsive digital environment, such as internet access or any other tool that enhances the process, has supported guest participation (Efiong & Adegbola, 2020). Finally, addressing privacy and safety concerns has been essential, as it has influenced guests' confidence in using homestay services, ensuring secure payment technologies and protecting their personal data. By integrating these factors into the UTAUT3 model, researchers and practitioners have understood the acceptance and usage of technology from the homestay sector for a higher-quality tourist experience and improved the market positioning of homestay businesses (Prakash et al., 2024).

## Stakeholder Theory

Stakeholder theory has explained the relationship patterns between operators and government bodies, as well as between private enterprises that function within the homestay sector (Attanasio et al., 2021). The study showed that when stakeholders worked together, their efforts successfully increased homestay operational performance and sustainability levels (Dong, 2024; Rasoolimanesh et al., 2020). The principles of UTAUT3 served as essential variables to comprehend why homestay operators embraced new technology, through examining perceptions of how easy or difficult it was to use, alongside social influence patterns which emerged as the main interview topics in this study (Alkhatib & Bayouq, 2021; Venkatesh et al., 2012).

## Practical Implications in Homestay Management

Table 6 summarizes the key practical implications of integrating a digital collaborative economy within homestay management. These implications have been categorized into specific operational areas to enhance clarity, strategic planning, and implementation.

**Table 6. Practical Implications Regarding Homestay Management**

Practical Area	Implication	Supporting source(s)
Tourist experience	<ul style="list-style-type: none"> <li>• Real-time online bookings and dynamic tariffing to enhance satisfaction</li> <li>• Predictive analytics to personalize experiences</li> </ul>	<ul style="list-style-type: none"> <li>• Buhalis et al. (2023)</li> <li>• Bulchand-Gidumal et al. (2023)</li> <li>• Vukasović &amp; Mihač (2021)</li> </ul>
Community engagement & sustainability	<ul style="list-style-type: none"> <li>• Cooperative marketing with local businesses</li> <li>• Promote waste reduction and energy efficiency</li> <li>• Peer-to-peer collaboration among hosts</li> <li>• Homestay networks and forums</li> </ul>	<ul style="list-style-type: none"> <li>• Suardana et al. (2024)</li> <li>• Kurniati &amp; Suryanto (2023)</li> <li>• Rasoolimanesh et al. (2020)</li> <li>• Vila-Lopez &amp; Küster-Boluda (2022)</li> </ul>

*continued on following page*

Table 6. Continued

Practical Area	Implication	Supporting source(s)
Pricing strategies	<ul style="list-style-type: none"> <li>• Dynamic pricing based on demand patterns, events, or segments</li> <li>• Digital loyalty programs with bonuses and promotions</li> </ul>	<ul style="list-style-type: none"> <li>• Baran &amp; Karaca (2024)</li> <li>• Pereira et al. (2022)</li> </ul>
Practical Area	Implication	Supporting source(s)
Analytical decision-making	<ul style="list-style-type: none"> <li>• Use analytics to evaluate occupancy, revenue, satisfaction</li> <li>• Analyze social media feedback for trend tracking and service adjustment</li> </ul>	<ul style="list-style-type: none"> <li>• Lonescu &amp; Sârbu (2024)</li> <li>• Prakash et al. (2024)</li> </ul>
Marketing and communication	<ul style="list-style-type: none"> <li>• Direct communication via social media</li> <li>• Use of testimonials and storytelling</li> <li>• Engagement with influencers and bloggers</li> </ul>	<ul style="list-style-type: none"> <li>• Seyyedamiri &amp; Khosravani (2020)</li> <li>• Alghamdi &amp; Bogari (2020)</li> </ul>
Training and development	<ul style="list-style-type: none"> <li>• Training in customer relations, digital tools, and sustainability</li> <li>• Participation in workshops/webinars to standardize service delivery</li> </ul>	<ul style="list-style-type: none"> <li>• Osman &amp; Zakaria (2020)</li> </ul>
Legal and compliance	<ul style="list-style-type: none"> <li>• Educate operators on local laws (short-term letting, data, consumer protection)</li> <li>• Assist in understanding insurance needs</li> </ul>	<ul style="list-style-type: none"> <li>• Baporikar (2020)</li> </ul>
Innovative payment methods	<ul style="list-style-type: none"> <li>• Accept digital wallets, cryptocurrency</li> <li>• Transparent fees and charges to boost trust</li> </ul>	<ul style="list-style-type: none"> <li>• Thanigan et al. (2021)</li> <li>• Diaz et al. (2024)</li> </ul>

## FUTURE RESEARCH DIRECTIONS

Although this study provided valuable insights into the homestay sector, there are limitations to consider. The research was focused on homestay operators in Selangor, which may not have fully represented the diverse challenges faced by operators in other regions of Malaysia. Additionally, the study predominantly explored the adoption of digital technologies that were currently accessible to operators, without addressing the significant barriers faced by those in rural or underserved areas. Future research could expand the sample size to include a broader range of regions and examine the challenges faced by homestay operators with limited access to technology.

## CONCLUSION

According to the research outcomes, the study demonstrated the significance of the collaborative digital economy model in reshaping the homestay industry in Malaysia, creating a relationship between theoretical research and practice. The management shift was founded on principles of collaboration, sharing common values, and teamwork, so that tourism stakeholders could move beyond individual transactions and establish a common movement and identity. By adopting such strategies, the homestay businesses increased customer support, developed a strong social and cultural foundation, and was supported by digital technology to expand into new markets. A wider implementation of this model can arguably lead to improved services for tourists, enhanced eco-friendly policies, enhanced pricing mechanisms, and deeper, more collaborative community relationships.

Additionally, online teamwork, particularly the use of big data, will enable homestay operators to have more control over their operations and enhanced marketing of their business in accordance with online trends. The community networking and collaborative aspects are projected to result in a more sustainable economy and more enjoyable tourism experience—for all stakeholders. In conclusion, the adoption of the digital collaboration approach to managing a homestay has been demonstrated as



significant and an approach that could result in tangible advancements for tourism across Malaysia. It will contribute to the creation of a dynamic and welcoming system that attracts a wide range of tourists and helps preserve local cultures and economies, through integrating theory with practice. It is also essential to improve this model on an ongoing basis—to reach the model's potential and guarantee that homestays continue to play a central role in Malaysian tourism.

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#### **DATA AVAILABILITY STATEMENT**

The authors confirm that the data supporting the findings of this study are available within the article.

#### **COMPETING INTERESTS STATEMENT**

The authors of this publication declare there are no competing interests.

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